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THE CABINET OF NATURAL HISTORY AND AMERICAN RURAL SPORTS WITH ILLUSTRATIONS.

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BEAVER.

THE

CABINET OF NATURAL HISTORY,

AND

AMERICAN RURAL SPORTS.

THE BEAVER.

CASTOR FIBER.

[VOL. III. PLATE I.]

Castor Fiber, GODMAN, vol. ii. p. 21. SABINE, app. p. 659. SAY. LONG's *Expedition to the Rocky Mountains*, i. p. 464.—*Le Castor ou le Bièvre*, BRISS. *Regn. an.* p. 133.—*Le Castor*, BUFF. viii. pl. 36.—Philadelphia Museum.

THERE is no animal, native of North America, so interesting and valuable as the Beaver; and it is equally certain, that few animals of the world have been so much admired and extolled, and, at the same time, have had so large a share of intelligence imputed to them more unjustly. But, with all the importance attached to the animal, how much ignorance exists of its true character.

If we examine the opinions of men on this subject, we see at once how deeply wrong impressions have become rooted by pondering over the fictitious histories of the Beaver,—or more particularly being influenced, in early youth, by the fabulous stories of the animal, framed as truth, and admitted into the various seminaries of learning. Here we find the Beaver placed at the head of all inferior creatures for sagacity and intelligence, and endowed with intellectual qualities superior to many nations or tribes of human beings.

This undoubtedly is error, and to overturn it must be the work of time and truth, by the introduction, into schools and families, of authentic histories of the animal.

It is, however, no trifling undertaking, to establish truth on prejudicial error, or attack the writings of the learned and eloquent, which have filled the world with theories or false statements, wrought up by ingenuity to almost sublimity.

Among the modern writers on Natural History, none seems to have exerted so general an influence as the "Count BUFFON," who appears to have been regarded, by most of his successors, as authority substantial and indubitable. Under these impressions, many writers have quoted his history of the Beaver, and transmitted it through successive years to the present time, with little contradiction. Among those who followed Buffon's track, may be named PENNANT, author of the British and Arctic Zoology, who, in the "history of his quadrupeds has transcribed the whole of his observations on the habits of the Beaver, from Buffon." SMELLIE, also, in his Philosophy of Natural History, (a work now used in many schools both in England and America,) has quoted the same author *verbatim*. Among the opponents of the foregoing author, and indeed of most other writers on the subject of the Beaver, the most formidable is HEARNE, whose testimony will be adduced in the sequel of this treatise, and Capt. G. CARTWRIGHT, in his journal of transactions, &c. on the Labrador coast, published in 1792. Dr. GODMAN, also, attacks the same with the following severe remarks:—"Who has not heard of the wonderful sagacity of the Beaver, or listened to the laboured accounts of its social and rational nature? Who that has read the impassioned eloquence of Buffon, to which nothing is wanting but truth in order to render it sublime, can forget the impression which his views of the economy and character of this species produced? The enchanter waves his wand, and converts animals, congregated by instinct alone, and guided by no moral influence, into social, rational, intelligent beings, superior to creatures high above them in organization, and even far more advanced than vast tribes of that race which has been justly and emphatically termed 'lords of creation.' Alas, for all these air-drawn prospects! while we endeavour to gaze upon their beauties, they fleet away, and leave no trace behind."

Many living witnesses can also be produced, whose evidence is derived from actual observation, against the falsity of those statements of the habits of the Beaver, which heretofore have only been regarded in the light of authenticity.

The writer of Natural History should be guided by truth in all of his descriptions, carefully avoiding every thing to which he was not an eye-witness, or that cannot be established by the most indubitable testimony; and leave nothing to fancy, or the workings of an enthusiastic imagination. It is only by the impress of truth, that the mind receives essential benefit, and the more perfect mankind become in the knowledge of animals of the inferior world, the better are they enabled to appreciate their own exalted being.

There is much to admire, not only in the Beaver, but in all other inferior animals; but our admiration should not be extended to the creature so much, as to the great Original who governs them in their actions in a sphere far above their consciousness.

Although the Beaver *exhibits* much sagacity, and certainly immense labour and perseverance, in the construction of dams and habitations, and forethought for winter provision,—yet we see the same power operating on many other animals, on a scale equal, if not superior. What do we see more to admire than the nidification of birds? This instinctive provision for their young, is accommodated by the parent birds to every place and circumstance, and, built of the most simple materials, their little nests defy the art of man to imitate them.

> "——— Mark it well; within, without:
> No tool had they that wrought, no knife to cut,
> No nail to fix, no bodkin to insert,
> No glue to join; their little beaks were all;
> And yet how neatly finished. What nice hands,
> And twenty years' apprenticeship to boot,
> Could make me such another?"

The wonderful mechanism of the spider's web,—the wariness and certainty which that insect displays in entrapping its victim,—and the whole economy of the honey-bee, have been regarded as so many wonders of the natural world. But are all these guided by any other power than that of pure instinct? Certainly not, as regards *their* consciousness.

In regard to the nature of instinct, it may be said, that the mind is too often led astray by wrong objects—or by forming a wrong basis for argument. For instance, we sometimes see a departure from the regular laws of instinct in animals around us,—as in the elephant, the horse, the dog, &c. In these are frequently exhibited apparent sagacity, memory, discernment, and other reasonable operations. But before we conclude from this, that the brute creation possess intellectual properties, we should inquire, what effect has the influence of man, or domestication, on them from which we would found our argument? It is to these, and other animals of like domestication, that recourse is always had, to prove the brute world possesses reason as well as instinct. Those animals, therefore, subject to domestication, are not proper objects from which to draw that conclusion; for it is evident, that these were originally intended for purposes connected with the comforts and welfare of mankind,—and the formation of their instinctive powers are such, as to be subject to his influence and guidance. Indeed, we see a wonderful influence exerted by human presence on all nature; and, as we are told in sacred writ, that God hath placed in all beasts the fear of man, it is reasonable to conclude, that the intelligence of the human species, imparted in a measure by association to the sagacity of those animals, often produces effects on them, which lead to results astonishing and wonderful.

Aside from these animals, over which man has exercised his influence, we behold all others governed by laws of necessity, which impel them in their course of operations, only to answer the end for which they were originally designed in a state of nature. The same potent energy which created, also guides them in those wonderful plans of necessity which we so much admire; and, although they are thus influenced and directed by a superior intelligent power, they have no consciousness of this exciting energy, nor can they appreciate the result of their labours, or value the interest attached to their actions.

Under this view, then, it may be said, that brutes only belong to the natural world; or, in other words, not possessing moral qualities, they do not belong to the moral world. They have no moral freedom of action, although they produce results often which would lead us, under a wrong view of the subject, to draw a different conclusion. Instances may be produced of actions in the dog, more moral or perfect, in an abstract sense, than those performed by human creatures; but we cannot for a moment admit that these are efforts of their own consciousness, unless we place them in a scale of moral excellence superior to man. But these actions are only *apparently* moral, as regards their conception, and not really so; for these animals are not capable of appreciating the excellence of their acts, nor to decide of their superiority over those of other brutes. Intelligence, moral actions, and science, therefore, are not objective to brutes, but are exercised on their natures by a governing power, above their perception or consciousness.

Having made these prefatory remarks, the history of the Beaver, in the form of a *parallel*, will be given, the authentic on one side, and the discarded or fabulous on the other.

AUTHENTIC HISTORY OF THE BEAVER.

"The Beaver dams differ in shape according to the nature of the place in which they are built. If the water in the river or creek have but little motion, the dam is almost straight; but when the current is more rapid, it is always made with a considerable curve convex toward the stream. The materials made use of in those dams are drift-wood, green willows, birch, and poplars, if they can be got; also mud and stones, intermixed in such a manner as must evidently contribute to the strength of the dam; but in these dams there is no other order or method observed, except that of the work being carried on with a regular sweep, and all the parts being made of equal strength.

"In places which have been long frequented by Beaver undisturbed, their dams, by frequent repairing, become a solid bank, capable of resisting a great force both of water and ice; and as the willow, poplar, and birch generally take root and shoot up, they by degrees form a kind of regular-planted hedge, which I have seen in some places so tall, that birds have built their nests among the branches.

"The situation of the Beaver houses is various. Where the Beavers are numerous they are found to inhabit lakes, ponds, and rivers, as well as those narrow creeks which connect the numerous lakes with which this country abounds; but the two latter are generally chosen by them when the depth of water and other circumstances are suitable, as they have then the advantage of a current to convey wood and other necessaries to their habitations, and because, in general they are more difficult to be taken, than those that are built in standing water.

"There is no one particular part of a lake, pond, river, or creek, of which the Beavers make choice for building their houses on, in preference to another; for they sometimes build on points, sometimes in the hollow of a bay, and often on small islands; they always choose, however, those parts that have such a depth of water as will resist the frost of winter, and prevent it from freezing to the bottom.

"The Beaver that build their houses in small rivers or creeks, in which the water is liable to be drained off when the back supplies are dried up by the frost, are wonderfully taught by instinct to provide against that evil, by making a dam quite across the river, at a convenient distance from their houses. This I look upon as the most curious piece of workmanship that is performed by the Beaver; not so much for the neatness of the work, as for its strength and real service; and at the same time it discovers such a degree of sagacity and foresight in the animal, of approaching evils, as is little inferior to that

FICTITIOUS HISTORY OF THE BEAVER.

"In the operation of constructing their dams, some Beavers are engaged in cutting down large trees for the purpose, while others traverse the vicinity of the river and cut smaller trees, some as thick as one's leg, and others as large as the thigh. They trim these and gnaw them in two at a certain height to make stakes: they bring these pieces first by land to the edge of the stream, and there float them to the dam; they then form a sort of close piling, which is still farther strengthened by interlacing the branches between the stakes. This operation supposes many difficulties vanquished; for to prepare these stakes, and place them in a nearly perpendicular situation, they must raise the large end of the stake upon the bank of the river, or against a tree thrown across it, while others at the same time plunge into the water and dig a hole with their fore feet for the purpose of receiving the point of the stake or pile, in order to sustain it erect. In proportion as some thus plant the piles, others bring earth, which they temper with their fore-feet and beat with their tails; they carry it in their mouths and with their fore-feet, and convey so large a quantity that they fill all the intervals of the piling. This pile work is composed of several ranges of stakes of equal height, all planted against each other, extending from one side of the river to the other; it is piled and plastered throughout. The piles are planted vertically on the side next the water-fall; the whole work is sloping on the side sustaining the pressure, so that the dam, which is ten or twelve feet wide at base, is only two or three feet thick at the summit. It has therefore not only all the solidity necessary, but the most convenient form for raising the water, preventing it from escaping, sustaining its weight, and breaking its violence. At the top of the dam, that is at the thinnest part, they make two or three sloped openings for the discharge of the superfluous water, and these are enlarged or closed up as the river swells or diminishes, &c.

"It would be superfluous after such an exposition of their public works, to give a detail of their private edifices, if in a history it were not necessary to relate *all* the *facts*, and if this first great work were not done with a view to render their little dwellings more commodious. These dwellings are cabins, or rather little houses, built in the water on close piles, near the edge of the pond, having two doors or issues, one on the land and the other on the water side. Sometimes they are found to have two or three stories, the walls being as much as two feet thick, elevated perpendicularly upon the piles which serve at the same time for the foundation and floor of the house, &c. The walls are covered with a sort of stucco, so well tempered, and so properly applied, that it appears as if it had been done by

AUTHENTIC HISTORY.—*Continued.*

of the human species, and is certainly peculiar to those animals.

"Though the Beaver which build their houses in lakes and other standing waters, may enjoy a sufficient quantity of their favourite element without the assistance of a dam, the trouble of getting wood and other necessaries to their habitations without the help of a current, must in some measure counterbalance the other advantages which are reaped from such a situation; for it must be observed that the Beaver which build in rivers and creeks, always cut their wood above their houses, so that the current, with little trouble, conveys it to the place required.

"The Beaver houses are built of the same materials as their dams, and are always proportioned in size to the number of inhabitants, which seldom exceed four old, and six or eight young ones; though, by chance, I have seen above double that number.

"These houses, though not altogether unworthy of admiration, fall very short of the general description given of them; for instead of order or regulation being observed in rearing them, they are of a much ruder structure than their dams.

"Those who have undertaken to describe the inside of Beaver houses, as having several apartments appropriated to various uses; such as eating, sleeping, store-houses for provisions, and one for their natural occasions, &c., must have been very little acquainted with the subject; or, which is still worse, guilty of attempting to impose on the credulous, by representing the greatest falsehoods as real facts. Many years constant residence among the Indians, during which I had an opportunity of seeing several hundreds of those houses, has enabled me to affirm that every thing of the kind is entirely void of truth; for, notwithstanding the sagacity of those animals, it has never been observed that they aim at any other conveniences in their houses, than to have a dry place to lie on; and there they usually eat their victuals, which they occasionally take out of the water.

"It frequently happens, that some of the large houses are found to have one or more partitions, if they deserve that appellation; but that is no more than a part of the main building, left by the sagacity of the Beaver to support the roof. On such occasions it is common for those different apartments, as some are pleased to call them, to have no communication with each other but by water; so that in fact they may be called double or treble houses, rather than different apartments of the same house. I have seen a large Beaver house built in a small island, that had near a dozen apartments under one roof: and, two or

FICTITIOUS HISTORY—*Continued.*

human hands. Their tail serves them as a trowel for applying this mortar, which they temper with their feet, &c.

"These retreats are not only very secure, but also very neat and commodious; the floor is strewed with verdure; boughs of box and fir serve for a carpet, upon which they never leave the least dirt. The window which looks out upon the water serves them for a balcony for the enjoyment of the air, or to bathe during the greater part of the day. They sit with the head and anterior parts of the body elevated and the posterior plunged in water; the opening is sufficiently elevated never to be closed by the ice, which in the climates where the Beavers reside, is sometimes three feet thick; they then lower the shelf by cutting the piles upon which it rested aslope, and make an opening into the water below the ice!!

"The habit which they have of continually retaining the tail and hinder parts in the water, appears to have changed the nature of their flesh. Thus the fore parts, as far as to the loins, has the quality, taste, and consistence of land animals; that of the thighs and the tail has the odour, savour, and all the qualities of fish; this tail, a foot long, an inch thick, and five or six broad, is really an extremity, a true portion of a fish attached to the body of a quadruped.

"However admirable, or marvellous the statements we have made on the labours and society of the Beaver may appear, we dare to say that no one will doubt their reality. All the relations made by different witnesses, at various times, agree together as to the facts we have related; and if our statement differ from some among them, it is only at points where they have swelled the marvellous, surpassed the truth, and even transcended probability!"—*Buffon's Nat. Hist.*

"Beavers are most industrious animals; nothing equals the art with which they construct their dwellings. They choose a small piece of ground with a rivulet running through it. This they form into a pond by making a dam across, first by driving into the ground stakes five or six feet long, placed in rows, walling each row with pliant twigs, and filling the interstices with clay, ramming it down close."—*Pennant's History of Quadrupeds.*

"They have a chief or superintendant in their works, who directs the whole. The utmost attention is paid to him by the whole community. Every individual has his task allotted, which they undertake with the utmost alacrity. The overseer gives a signal, by a certain number of smart slaps with his tail, expressive of his orders. The moment the artificers hear it they hasten to the place thus pointed

AUTHENTIC HISTORY—*Continued.*

three of these only excepted, none of them had any communication with each other but by water. As there were Beaver enough to inhabit each apartment, it is more than probable that each family knew its own, and always entered at their own door, without having any further connexion with their neighbours than a friendly intercourse; and to join their united labours in erecting their separate habitations, and building their dams where required. It is difficult to say whether their interest on other occasions was any ways reciprocal. The Indians of my party killed twelve old Beaver, and twenty-five young and half-grown ones out of the house above mentioned; and on examination found that several had escaped their vigilance, and could not be taken but at the expense of more trouble than would be sufficient to take double the number in a less difficult situation. The difficulty here alluded to, was the numberless vaults the Beaver had in the sides of the pond, and the immense thickness of the house in some parts.

"Travellers who assert that the Beaver have two doors to their houses, one on the land side, and the other next the water, seem to be less acquainted with those animals than others who assign them an elegant suite of apartments. Such a proceeding would be quite contrary to their manner of life, and at the same time would render their houses of no use, either to protect them from their enemies, or guard them against the extreme cold in winter.

"The quiquehatches, or wolvereens, are great enemies to the Beaver; and if there were a passage into their houses on the land side, would not leave one of them alive wherever they came.

"I cannot refrain from smiling, when I read the accounts of different authors who have written on the economy of those animals, as there seems to be a contest between them, who shall most exceed in fiction. But the compiler of the wonders of nature and art seems, in my opinion, to have succeeded best in this respect; as he has not only collected all the fictions into which other writers on the subject have run, but has so greatly improved on them, that little remains to be added to his account of the Beaver, beside a vocabulary of their language, a code of their laws, and a sketch of their religion, to make it the most complete natural history of that animal which can possibly be offered to the public.

"There cannot be a greater imposition, or indeed a grosser insult, on common understanding, than the wish to make us believe the stories of some of the works ascribed to the Beaver; and though it is not to be supposed

FICTITIOUS HISTORY—*Continued.*

out, and perform the allotted labour, whether it is to carry wood, or draw, or repair any accidental breach. They have also their sentinels, who, by the same kind of signal, give notice of any apprehended danger. They are said to have a sort of slavish Beaver among them (analogous to the drone) which they employ in servile works and domestic drudgery."—*Pennant's Arctic Zoology.*

"The Castor, or Beaver, when in the rivers, feeds upon shell-fish, and such other prey as it can catch. This variety of food is the reason why its hinder parts, to the ribs, have the taste of fish, and that they are eaten upon fast days, and all the rest has the taste of flesh, so that it is not used at other times.

"It has pretty large teeth, the under standing out beyond their lips about three fingers breadth; the upper about half a finger, being very broad, crooked, strong and sharp, growing double, very deep in their mouths, bending circular, like the edge of an axe, and are of a yellowish red. They take fishes upon them as if they were hooks, being able to break in pieces the hardest bones. When he bites he never loses his hold until his teeth meet together. The bristles about their mouths are as hard as horns; their bones are solid and without marrow; their fore feet are like a dog's, and their hinder like a swan's. Their tail is covered over with scales, being, like a soal, about six inches broad and ten inches long, which he uses as a rudder to steer with when he swims to catch fish; and though his teeth are so terrible, yet when men have seized his tail they can govern the animal as they please.

"The Beavers make themselves houses of square timber, which they gnaw down with their teeth almost as even as if they were sawed, and almost as equal as if it were measured. They lay these pieces across, and each is let down by large notches into the other, so that, having dug a hole for their foundation, they build several stories, that they may rise higher or lower, according to the fall of water."—*Pomet, History of Drugs.*

"Amongst the Beavers some are accounted masters, some servants. They are cleanly in their houses, for the making of which, they draw the timber on the belly of their ancients, they lying on their backs."—*Lemery.*

"Three Beavers were seen cutting down a large cottonwood tree: when they had made considerable progress one of them retired to a short distance and took his station in the water, looking steadfastly at the top of the tree. As soon as he perceived the top of the tree begin to move

AUTHENTIC HISTORY—*Continued.*

that the compiler of a general work can be intimately acquainted with every subject of which it may be necessary to treat, yet a very moderate share of understanding is surely sufficient to guard him against giving credit to such marvellous tales, however smoothly they may be told, or however boldly they may be asserted, by the romancing traveller.

"To deny that the Beaver is possessed of a very considerable degree of sagacity, would be as absurd in me, as it is in those authors who think they cannot allow them too much. I shall willingly grant them their full share; but it is impossible for any one to conceive how or by what means, a beaver, whose full height when standing erect does not exceed two feet and a half, or three feet at most, and whose fore-paws are not much larger than a half-crown piece, can 'drive stakes as thick as a man's leg into the ground three or four feet deep.' Their 'wattling those stakes with twigs,' is equally absurd; and their plaistering the inside of their houses with a composition of mud and straw, and swimming with mud and stones on their tails,' are still more incredible. The form and size of the animal, notwithstanding all its sagacity, will not admit of its performing such feats; and it would be as impossible for a beaver to use its tail as a trowel, except on the surface of the ground on which it walks, as it would have been for Sir James Thornhill to have painted the dome of St. Paul's cathedral without the assistance of scaffolding. The joints of their tail will not admit of their turning it over their backs on any occasion whatever, as it has a natural inclination to bend downwards; and it is not without some considerable exertion that they can keep it from trailing on the ground. This being the case, they cannot sit erect like a squirrel, which is their common posture; particularly when eating, or when they are cleaning themselves, as a cat or squirrel does, without having their tails bent forward between their legs; and which may not improperly be called their trencher.

"So far are the beavers from driving stakes into the ground when building their houses, that they lay most of the wood crosswise, and nearly horizontal, and without any other order than that of leaving a hollow or cavity in the middle; when any unnecessary branches project inward, they cut them off with their teeth, and throw them in among the rest, to prevent the mud from falling through the roof. It is a mistaken notion, that the wood-work is first completed and then plaistered; for the whole of their houses, as well as their dams, are from the foundation one mass of wood and mud, mixed with stones, if they can

FICTITIOUS HISTORY—*Continued.*

towards its fall, he gave notice of the danger to his companions, who were still at work, gnawing at its base, by slapping his tail upon the surface of the water, and they immediately ran from the tree out of harm's way."—*Long's Expedition to the Rocky Mountains*, vol. i. p. 464. (*A hunter's story.*)

"At the head of one of the rivers of Louisiana I discovered a Beaver dam. Not far from it, but hidden from the sight of the animals, I and my companions erected our hut, in order to watch the operations at leisure. We waited till the moon shone pretty bright; and then carrying branches of trees in our front to conceal us, we went with great care and silence to the dam. I then ordered one of the men to cut, as silently as possible, a gutter, about a foot wide, through it, and retire immediately to the hiding-place.

"As soon as the water through the gutter began to make a noise, we heard a Beaver come from one of the huts, and plunge in. We saw him get upon the bank, and clearly perceived that he examined it. He then, with all his force, gave four distinct blows with his tail, when immediately the whole colony threw themselves into the water, and arrived upon the dam. When they were all assembled, one of them appeared, by muttering, to issue some kind of orders; for they all instantly left the place, and went out on the banks of the pond in different directions. Those nearest to us were between our station and the dam, and therefore we could observe their operations very plainly. Some of them formed a substance resembling a kind of mortar; others carried this on their tails, which served as sledges for the purpose. I observed that they put themselves two and two, and that each of a couple loaded his fellow. They trailed the mortar, which was pretty stiff, quite to the dam, where others were stationed to take it; these put it into the gutter, and rammed it down with blows of their tails.

"The noise of the water soon ceased, and the breach was completely repaired. One of the Beavers then struck two blows with his tail; and instantly they all took to the water without noise, and disappeared.

"We afterwards retired to the hut to rest, and did not again disturb these industrious animals till the next day. In the morning, however, we went together to the dam to observe its construction, for which purpose it was necessary that we should cut a part of it down. The depression of the water in consequence of this, together with the noise they made, roused the Beavers again. The animals seemed much disturbed by these exertions; and one of them in particular,

AUTHENTIC HISTORY—*Continued.*

be procured. The mud is always taken from the edge of the bank, or the bottom of the creek or pond, near the door of the house; and though their fore-paws are so small, yet it is held close up between them, under their throat, that they carry both mud and stones; while they always drag the wood with their teeth.

"All their work is executed in the night; and they are so expeditious in completing it, that in the course of one night I have known them to have collected as much mud at their houses as to have amounted to some thousands of their little handfuls; and when any mixture of grass or straw has appeared in it, it has been, most assuredly, mere chance, owing to the nature of the ground from which they had taken it. As to their designedly making a composition for that purpose, it is entirely void of truth.

"It is a great piece of policy in those animals, to cover, or plaister as it is usually called, the outside of their houses every fall with fresh mud, and as late as possible in the autumn, even when the frost becomes pretty severe; as by this means it soon freezes as hard as a stone, and prevents their common enemy, the quiquehatch, from disturbing them during the winter. And as they are frequently seen to walk over their work, and sometimes to give a flap with their tail, particularly when plunging into the water, this has, without doubt, given rise to the vulgar opinion that they use their tails as a trowel, with which they plaister their houses; whereas that flapping of the tail is no more than a custom, which they always preserve even when they become tame and domestic, and more particularly so when they are startled.

"Their food chiefly consists of a large root, (*nuphar Luteum,*) something resembling a cabbage stalk, which grows at the bottom of the lakes and rivers. They eat also the bark of trees, particularly that of the poplar, birch, and willow; but the ice preventing them from getting to the land in winter, they have not any barks to feed upon during that season, except that of such sticks as they cut down in summer, and throw into the water opposite the doors of their houses; and as they generally eat a great deal, the roots above mentioned constitute a chief part of their food during the winter. In summer they vary their diet, by eating various kinds of herbage, and such berries as grow near their haunts during that season.

"When the ice breaks up in the spring, the beaver always leave their houses, and rove about the whole summer, probably in search of a more commodious situation; but in case of not succeeding in their endeavours, they return again to their old habitations a little before the fall

FICTITIOUS HISTORY—*Continued.*

was observed several times to come pretty near the labourers, as if to examine what passed. As I apprehended that they might run into the woods if further disturbed, I advised my companions again to conceal themselves.

"One of the Beavers then ventured to go upon the breach, after having several times approached and returned like a spy. He surveyed the place, and then struck four blows, as he did the preceding evening, with his tail. One of those that were going to work, passed close by me; and as I wanted a specimen to examine, I shot him. The noise of the gun made them scamper off with greater speed than a hundred blows of the tail of their overseer could have done. By firing at them several times afterwards, they were compelled to run with precipitation into the woods. I then examined their habitations, and under one of the houses I found fifteen pieces of wood, with the bark in part gnawed off, apparently intended for food. Round the middle of this house, which formed a passage for them to go in and out at, I found no less than fifteen different cells. These habitations were made by posts fixed slantingly upwards to a point; and in the middle was the floor, resting firmly on notches in the posts."—*Du Pratz.*

"It seems difficult for a traveller to publish his adventures without mentioning the Castor, or Beaver, even though his travels may have been limited to Africa, where this animal is not to be found. I should wish to avoid repetitions, but I do not distinctly recollect any thing that has been stated by these ingenious gentlemen on the subject, or even what Buffon wrote about it in his closet. I will communicate to you only what I have myself actually seen, and been from good authority informed of, respecting these astonishing creatures. If I mention circumstances which others have narrated before me, you may consider it as affording additional evidence of what you were previously acquainted with; and if what I advance be new, you will, I hope, give me credit for adding to your information.

"A small river flows into the lake on the western side. The Beavers have barricadoed the mouth of it by a dike, completed in a manner which would not disgrace a corps of engineers; the water is thus kept back, and forms a pond, in which they have erected their habitations. It is proper to notice that the river in question is never dried up, as otherwise they would not have fixed upon it for their purpose.

"The stakes fixed in the earth, and the trunks of trees which are laid across them, are of considerable thickness

AUTHENTIC HISTORY—*Continued.*

of the leaf, and lay in their winter stock of woods. They seldom begin to repair the houses till the frost commences, and never finish the outer-coat till the cold is pretty severe, as hath been already mentioned.

"When they shift their habitations, or when the increase of their number renders it necessary to make some addition to their houses, or to erect new ones, they begin felling the wood for these purposes early in the summer, but seldom begin to build till the middle or latter end of August, and never complete their houses till the cold weather be set in.

"Notwithstanding what has been so repeatedly reported of those animals assembling in great bodies, and jointly erecting large towns, cities, and commonwealths, as they have sometimes been called, I am confident, from many circumstances, that even where the greatest numbers of beaver are situated in the neighbourhood of each other, their labours are not carried on jointly in the erection of their different habitations, nor have they any reciprocal interest, except it be such as live immediately under the same roof; and then it extends no farther than to build or keep a dam which is common to several houses. In such cases it is natural to think that every one who receives benefit from such dams, should assist in erecting it, being sensible of its utility to all.

"Persons who attempt to take beaver in winter should be thoroughly acquainted with their manner of life, otherwise they will have much trouble to effect their purpose, and probably without success in the *end;* because they have always a number of holes in the banks, which serve them as places of retreat when any injury is offered to their houses; and in general it is in those holes that they are taken.

"When the beaver which are situated in a small river or creek are to be taken, the Indians sometimes find it necessary to stake the river across, to prevent them from passing; after which, they endeavour to find out all their holes or places of retreat in the banks. This requires much practice and experience to accomplish, and is performed in the following manner: Every man being furnished with an ice-chisel, lashes it to the end of a small staff about four or five feet long; he then walks along the edge of the banks, and keeps knocking his chisels against the ice. Those who are well acquainted with that kind of work well know by the sound of the ice when they are opposite to any of the beavers' holes or vaults. As soon as they suspect any, they cut a hole through the ice big enough to admit an old beaver; and in this manner proceed till they have found out all their places of retreat,

FICTITIOUS HISTORY—*Continued.*

and length. It is difficult to conceive how such small animals are able to transport such bulky articles. But what is more astonishing is, that they never make use of trees blown down by the wind, or levelled by the strength of man, but select them themselves, cutting down such as are peculiarly adapted for the intended building, and doing this always on the banks of lakes or large rivers, in order to avail themselves of the opportunity of conveying them by water to the place intended.

"While five or six are occupied in cutting or sawing with their teeth the bottom of the trunk, another stations himself in the middle of the river, and indicates by a hissing sound, or by striking the water with his tail, which way the top inclines towards the fall, that the operators without interrupting their labour may conduct it with proper caution, and preclude all danger. It is worthy of remark, that they never gnaw the tree on the land side, but always on that of the lake or river, in order to ensure its falling into it.

"The whole tribe then combine their exertions, and float the trunk to the place where it is wanted. Here, with their teeth, they point the stakes;—with their claws dig deep holes for them in the earth, and with their paws introduce and drive them in. They then place branches against them, and fill up the interstices with mortar, which some prepare while the others are cutting down the trees, or engaged in different departments of labour; for the tax of labour is carefully distributed, and no individual remains unemployed. The mortar used by these wonderful animals becomes more hard and solid than the finest Roman cement.

"When the dike is completed, and has been proved fit for the purpose designed, they effect an opening at the bottom of it, by way of floodgate, (which they open or close as may be required,) that the stream may not be too much impeded. They then commence building their habitation in the midst of the mass constituting the dike. They never begin to erect the habitation previously to forming the dike, lest the latter operation should fail of success, and they should consequently lose their valuable time and labour.

"Their mansion, formed equally of wood and mortar, consists of two stories, and is double; its length is in proportion to the number of the tribe for whom it is intended.

"The first stage, or story, is a magazine in common for provisions, and is under water; the second is divided into dormitories, each family having its distinct chamber: this part of the building is above the water.

"Under the foundations of the building they form a

AUTHENTIC HISTORY.—*Continued.*

or at least as many of them as possible. While the principal men are thus employed, some of the understrappers, and the women, are busy in breaking open the house, which at times is no easy task; for I have frequently known these houses to be five and six feet thick; and one in particular, was more than eight feet thick on the crown. When the beaver find that their habitations are invaded, they fly to their holes in the banks for shelter; and on being perceived by the Indians, which is easily done, by attending to the motion of the water, they block up the entrance with stakes of wood and then haul the beaver out of its hole, either by hand, if they can reach it, or with a large hook made for that purpose, which is fastened to the end of a long stick.

"In this kind of hunting, every man has the sole right to all the beaver caught by him in the holes or vaults; and as this is a constant rule, each person takes care to mark such as he discovers, by sticking up the branch of a tree, or some other distinguishing post, by which he may know them. All that are caught in the house also are the property of the person who finds it.

"The same regulations are observed, and the same process used in taking beaver that are found in lakes and other standing waters, except it be that of staking the lake across, which would be both unnecessary and impossible. Taking beaver-houses in these situations is generally attended with less trouble and more success than in the former.

FICTITIOUS HISTORY.—*Continued.*

number of avenues, by means of which they enter and quit subterraneously, so as not to be perceived by the most keen and watchful Indian; these all terminate at a distance from their dwelling, and in part of the mound constituting their dike, or in lakes or rivers, near which they usually form their establishments, that they may have it in their power to select that direction which may be most convenient and least dangerous in the various incidents and exigencies of their lives.

"Beavers are divided into tribes, and sometimes merely into small bands, each of which has its chief; and order and discipline exist in these distinct societies to a greater extent probably than among the Indians, or even among some civilized and polished nations.

"Their magazines are invariably fully stored with provisions in summer; and no one is permitted to break in upon this stock until the scarcity of winter begins to be experienced, unless circumstances render it imperatively necessary to violate this rule. In no case, however, is any one permitted to enter without the express authority and indeed the presence of the chief. Their provisions consist, in general, of the bark of trees, principally of the willow and poplar species. On some occasions when bark is not to be found in sufficient quantities, they collect also the wood of those trees, which they divide into distinct parcels with their teeth.

(TO BE CONTINUED.)

GROTTO DEL CANE.

I BELIEVE I did not tell you, in my last, that I made a visit to the famous *Grotto del Cane*, a visit to me so full of interest, that I cannot help giving you some account of it, notwithstanding the numerous descriptions we already have of that singular place. I was enticed onward, one bright morning, by the numberless curious objects that present themselves about Naples, till I found myself at the entrance of the Grotto of Posilipo, then at its further extremity, then in the beautiful valley beyond; and being now not far from the Grotto del Cane, set out in earnest for a treat that I had, from the first, been promising myself. A guide was quickly selected from a set of ragged urchins, who offered themselves along the road. Thus escorted, I soon reached the house of the Custode, or showman, and a rapid knock and short dialogue having settled the preliminaries, I pushed on towards the Grotto, leaving him to hunt up his dog and follow at his leisure. The road, which had hitherto obliquely crossed the valley noticed above, now approached its edge, and led us among rough, abrupt hills, until suddenly turning to the right, and entering a deep, natural chasm, it brought us in a few minutes to the edge of the Lago d'Agnaro. This lake is about four miles in circuit, and evidently occupies the crater of an extinct volcano. My little Cicerone led me along the border of the lake, for about a hundred yards, when pointing to a small door against the side of the crater, a short distance above us, he told me that there was the object of my search. The name *Grotto* had misled me, and my disappointment was great, when, on the door being unlocked and thrown open, an excavation, of not more than twelve feet in length, and seven or eight in height, made its appearance. To the right, it was the rudest thing possible. The bottom, sides, and top, were of the bare earth, very uneven, and as the cave was shaped much like an egg, it was only at the centre or near it, that a person could stand upright. The floor, and sides to a

well-defined horizontal line eight or nine inches above it, appeared moist, and on stepping in, I immediately became sensible of a small degree of warmth up to the same height, although the atmosphere down to the ground was perfectly transparent. The custode first directed me to get on my hands and knees, and to bring my face within the influence of the gas. I took the posture desired, and as I had lowered my head to within a short distance of the ground, and found myself breathing a pure air, was beginning to think the wonders of the grotto far overrated, when I suddenly found myself bolt upright, and on my feet, having been brought there by a sensation as if a thousand needles had been at once thrust into my nostrils. The feeling was like that often experienced after drinking strong soda water, only to an almost overpowering degree.

The next experiment was a cruel one, but I hope pardonable, inasmuch as the cruelty was far from being of a wanton kind. The man looked for a dog which he had brought with him, and tied to some bushes near the door, and taking the struggling animal in his arms laid him down in the deepest part of the cave. The dog laid quiet for a moment, and then, with a sudden start nearly escaped from the custode's hands, but was brought back, and once more held down within the full power of the gas. His struggles were violent, and his eyes turned upward toward his master, showed a high degree of suffering; but presently, his muscles began to relax, and his struggles ceased, his open and beseeching eye only showing life. His master now took him up, and laid him in the pure air, outside the cave. Here he remained motionless for nearly two minutes, when he was seized with violent spasms, gasped for breath; at length got on his feet, staggered about, and then recovering himself fully, darted away into the bushes. A whistle brought him back, and he came up, wagging his tail, to receive the customary crust of bread. The man now lighted a couple of torches, and placing one in my hand, allowed me to amuse myself with such experiments as are frequently practised in our Laboratories with this gas, and others of a similar character. The flame began to separate from the torch as soon as it was lowered to the line noticed above, showing a smooth uniform surface to the gas. When moved along the sill of the door, it burnt with undiminished brightness, except where a small channel was made by an inequality in the wood; when it sunk into this the light was immediately extinguished. In the same manner, I could discern the gas flowing down the hollows leading from this to the lake. When I had satisfied myself with these experiments, the custode took both the torches, and rubbing them against the sides of the cave, filled the bottom of it with smoke; the hitherto invisible spirit of the cave took form and substance; and I was warned by a gentle hint, for half a dollar, that the exhibition was at an end.—*Silliman's Journal.*

OBSERVATIONS ON IGNIS FATUUS.

By Rev John Mitchell.

Those luminous appearances, which are popularly called "Will-o'the-wisp" and "Jack-a-lantern," have been alike the object of vulgar superstition and philosophical curiosity; and notwithstanding all attempts to apprehend and subject them to examination, they are not much more the subjects of knowledge now than they were centuries ago. They are still but an ignis fatuus to the philosopher, and a thing of mystery to the credulous.

I was myself, formerly familiar with these appearances; they were of frequent occurrence near my father's residence, owing probably, to the proximity of extensive wet grounds, over which they are usually seen. The house stood upon a ridge, which sloped down on three sides to the beautiful meadows which form the margin of the Connecticut, and of its tributary creeks, and which, owing to their own luxuriance and the deposits of the vernal freshets, are covered with rich and constantly decaying vegetable matter. From the circumstance, also, that we had no neighbours in the direction of these grounds, a light could not be seen over them without attracting our notice. I mention this by way of suggesting, that probably the ignis fatuus, in consequence of its not being always distinguished from the lights of surrounding houses, and therefore exciting no curiosity, is oftener seen than it is supposed to be.

These mysterious luminaries used often to be seen by the fishermen; who plied their nets by night as well as by day. They commonly reported that they saw them a little above the surface of the meadow, dancing up and down, or gliding quietly along in a horizontal line. Sometimes two, or even three, would be seen together, skipping and dancing or sailing away in concert, as if rejoicing in their mutual companionship. I might entertain you with abundance of fabulous accounts of them—the offspring of imaginations tinctured with superstition, and of minds credulous from a natural love of the marvellous. Fables, however, are of little value for the purposes of science: if the following account of some of the phenomena of the ignis fatuus, shall, with the observations of others, contribute towards a true theory of its nature, you will think them worthy of a place in your Journal.

A friend of mine, returning from abroad late in the

evening, had to cross a strip of marsh. As he approached the causeway, he noticed a light towards the opposite end, which he supposed to be a lantern in the hand of some person whom he was about to meet. It proved, however, to be a solitary flame, a few inches above the marsh, at the distance of a few feet from the edge of the causeway. He stopped some time to look at it; and was strongly tempted, notwithstanding the miriness of the place, to get nearer to it, for the purpose of closer examination. It was evidently a vapour, [phosphuretted hydrogen?] issuing from the mud, and becoming ignited, or at least luminous, in contact with the air. It exhibited a flickering appearance, like that of a candle expiring in its socket; alternately burning with a large flame and then sinking to a small taper; and occasionally, for a moment, becoming quite extinct. It constantly appeared over the same spot.

With the phenomena exhibited in this instance, I have been accustomed to compare those exhibited in other instances, whether observed by myself or others; and generally, making due allowance for the illusion of the senses and the credulity of the imagination in a dark and misty night, (for it is on such nights that they usually appear,) I have found these phenomena sufficient for the explanation of all the fantastic tricks that are reported of these phantoms.

They are supposed to be endowed with locomotive power. They appear to recede from the spectator, or to advance towards him. But this may be explained without locomotion—by their variation in respect to quantity of flame. As the light dwindles away, it will seem to move from you, and with a velocity proportioned to the rapidity of its diminution. Again, as it grows larger, it will appear to approach you. If it expires, by several flickerings or flashes, it will seem to skip from you, and when it re-appears you will easily imagine that it has assumed a new position. This reasoning accounts for their apparent motion, either to or from the spectator; and I never could ascertain that they moved in any other direction, that is, in a line oblique or perpendicular to that in which they first appeared. In one instance, indeed, I thought this was the fact, and what struck me as more singular, the light appeared to move, with great rapidity, directly against a very strong wind. But after looking some time, I reflected that I had not changed the direction of my eye at all, whereas if the apparent motion had been real, I ought to have turned half round. The deception was occasioned by the motion of the wind itself—as a stake standing in a rapid stream will appear to move against the current.

It is a common notion that the ignis fatuus cannot be approached, but will move off as rapidly as you advance. This characteristic is mentioned in the Edinburgh Encyclopœdia. It is doubtless a mistake. Persons attempting to approach them, have been deceived perhaps as to their distance, and finding them farther off than they imagined, have proceeded a little way and given over, under the impression that pursuit was vain. An acquaintance of mine, a plain man, told me he actually stole up close to one, and caught it in his hat, as he thought;—"and what was it?" I asked. "It was'nt nothin." On looking into his hat for the "shining jelly," it had wholly disappeared. His motion had dissipated the vapour, or perhaps his foot had closed the orifice from which it issued. To this instance another may be added. A young man and woman, walking home from an evening visit, approached a light, which they took for a lantern carried by some neighbour, but which on actually passing it, they found to be borne by no visible being; and taking themselves to flight, burst into the nearest house with such precipitation as to overturn the furniture, and impart no small share of their fright to the family.

The circumstance that these lights usually appear over marshy grounds, explains another popular notion respecting them; namely, that they possess the power of beguiling persons into swamps and fens. To this superstition Parnell alludes in his Fairy Tale, in which he makes Will-o'the-wisp one of his dancing fairies;

> "Then Will who bears the wispy fire,
> To trail the swains among the mire," &c.

In a misty night, they are easily mistaken for the light of a neighbouring house, and the deceived traveller, directing his course towards it, meets with fences, ditches, and other obstacles, and by perseverance, lands at length, quite bewildered, in the swamp itself. By this time, he perceives that the false lamp is only a mischievous jack-a-lantern. An adventure of this kind I remember to have occurred in my own neighbourhood. A man left his neighbour's house late in the evening, and at day-light had not reached his own, a quarter of a mile distant; at which his family being concerned, a number of persons went out to search for him. We found him near a swamp, with soiled clothes and a thoughtful countenance, reclining by a fence. The account he gave was, that he had been led into the swamp by a jack-a-lantern. His story was no doubt true, and yet had little of the marvellous in it. The night being dark, and the man's senses a little disordered withal, by a glass too much of his neighbour's cherry, on approaching his house, he saw a light, and not suspecting that it was not upon his own mantel, made towards it. A bush or a bog, might have led to the same place, if he had happened to take it for his chimney-top.—*Ib.*

To the Editor of the Cabinet of Natural History.

A NEW PROPERTY OF THE FETID MATTER OF THE SKUNK.

While perusing the history of the Skunk, in the second volume of your work, I was reminded of a circumstance that happened in this neighbourhood, and which was related to me by an eye-witness.

Two men were hunting Skunks, for the purpose of obtaining their fur, and being labourers, from necessity were obliged to spend the night in that occupation. They had seen several, but had been unsuccessful in taking any. One of them, however, perceived something indistinctly in a crevice of the rocks, and approached to examine it. He stooped over the place with a stick in his hand to aid in ascertaining the description of the animal before him. He disturbed it with the weapon, and received in his eyes the fetid matter of a Skunk. So violent was the pain, that he roared out "help!" and it wholly deprived him of sight for some hours. His companion, (the narrator of the circumstances,) led him to a brook, not far distant from the scene of the disaster, in whose limpid waters he washed his eyes, and under this treatment the pain began gradually to diminish, and the power of sight to return. It was followed by an inflammation which lasted for several days, but then subsided.

His sight was so improved that objects were distinguished in the night as perfectly as in the day. What power this fluid has to improve the vision I am ignorant of; and this simple tale is all I have heard to establish the truth of that power; and in this perplexed condition, I would ask, if any one has seen or known of any other instances of the effect of this fluid on the human system.

X. Y. Z.

Geneva, N. Y. Feb. 4th, 1833.

TEST OF THE PERCUSSION PRINCIPLE.

The question as to the using of percussion locks in the army, is about to be decided in France. By experiments made in the Hanoverian army, it appears that out of 340 muskets, with percussion locks, consuming together 27,000 cartridges, there were only 21 missed fire from the failure of the priming, and 72 from the defect of charge, making in all 93: while out of the same number of muskets, with flint locks, 206 shots failed from the priming, and 599 from the charge, in all 806. Still further experiments were made both in the exposing to a constant rain, by wetting the inside of the cup, and by putting water in the touch-hole. The result was, that the guns, after being exposed to the injuries of the weather, or even a constant rain, were much more to be relied upon than those with flint locks. Marshal Soult, who had been for a long time impressed with the advantages to be derived from the use of percussion guns, resolved to renew the above experiments in France,—and last year a committee of officers, by his direction, repeated all the experiments, and their report completely establishes the supremacy of the percussion lock. At this moment, however, nearly 2,600 muskets of all the different kinds have been fitted up with percussion locks in order to make a grand and last trial.

WILD TURKEY.

MELEAGRIS GALLOPAVO.

[Vol. III. Plate II.]

Meleagris Gallopavo, Ch. Bonaparte, *Synops. of Birds of the United States, p.* 122.—Ch. Bonaparte's *American Ornithology*, vol. i. p. 79, pl. IX.—Audubon's *Ornithological Biography*, p. 1, vol. i., pl. I. vol. i.

Meleagris Gallopavo, Linn. *Syst.* I. p. 268, sp. 1.—Gmel. *Syst.* I. p. 732, sp. 1.—Lath. *Ind.* p. 618, sp. 1.—Wilson, *Am. Orn.* VI. *Index*, p. xvii.—Stephens' *Cont. of* Shaw's *Zool.* XI. Part i. p. 156.

Gallopavo Sylvestris Novæ-Angliæ. a New-England Wild Turkey) Ray, *San.* p. 51, sp. 3.—Catesby *Carolina*, I. *App.* p. xliv.

Meleagris Americanus, the Wild Turkey, Bartram, Trav. p. 290.

Dindon, Buff. *Ois.* II. p. 132, pl. III. *Pl. Enl.* 97, *dom.*—Temm. *Hist. Nat. des Pig. et Gall.* II. p. 374.—Gerardin, *Tabl. Elem. d'Orn.* II. p. 103, pl. XXI. fig. 2.

Wild Turkey; Clayton, *Virginia, Phil. Trans.* XVII. p. 992.—Lawson, *Carolina, p.* 149.

American Turkey, Lath. *Syn.* II. Part ii. p. 676, sp. 1.

Domestic Turkey, Penn. *Brit. Zool.* I. sp. 97.—J. Doughty's collection.

The most beautiful and interesting bird of North America, is the Wild Turkey; and for usefulness, and the delicacy of its flesh, is not surpassed, if indeed equalled, by any other individual of the feathered tribe on the whole

earth,—while it is a fact fully admitted, that this bird is the origin whence sprung the whole domestic race of Turkeys now scattered over almost every country.

The Wild Turkey is strictly a native of North America, having its range from the isthmus of Darien on the south, to the fiftieth degree north,—and east and west, the Atlantic Ocean and the Rocky Mountains. No individual of the species has ever been seen south of Panama, and it is utterly unknown beyond Lake Superior. There is no good reason, however, that its western range should be limited to the Rocky Mountains, as the country and climate beyond them, warrant the conclusion, that these birds exist even to the shores of the Pacific Ocean. In the north Atlantic states, Turkeys have become very scarce, but in the south and west they are exceedingly plentiful. In Virginia, the Carolinas, Georgia, and Florida, many may at all times be found; but in every state west of these, multitudes of these magnificent birds are continually roaming the fields and forests. Some Turkeys still exist in the inaccessible hills of New-Jersey and New-York, but are to be found in greater numbers among the mountains of Pennsylvania.

It is not precisely known at what period the Turkey was first introduced into Europe; but from the years 1525 to 1530, the earliest mention is made of this bird,—while from that period to the present, its increase has been wonderfully rapid, until it has now become an inhabitant of almost every poultry-yard, and is regarded as a standing dish at all festivals, and tables of hotels and private families.

Many attempts have been made to introduce the Wild Turkey, in its native state, on several preserves of game in Europe,—but with the exception of one or two instances in England, they have not succeeded.

So greatly was the Turkey esteemed in Europe shortly after its introduction, that "in the year 1566, a present of twelve Turkeys was thought not unworthy of being offered by the municipality of Amiens to their king, at whose marriage, in 1570, it is stated they were first eaten in France. Heresback asserts that they were introduced into Germany about 1530; and a sumptuary law made at Venice, in 1577, particularizes the tables at which they were permitted to be served."

"Those who have seen only the domesticated bird, can form but a faint idea of its beauty in a state of nature. When fully grown the male Wild Turkey measures nearly four feet in length, and more than five in the expanse of its wings. Its head, which is very small in proportion to its body, is covered with a naked bluish skin, which is continued over the upper half of its neck. On this skin are placed a number of wart-like elevations, red on the upper portion, and whitish below, interspersed with a few scattered blackish hairs. On the under part of the neck the skin is flaccid and membranous, and extends downwards in the shape of large wattles. From the base of the bill, at its junction with the forehead, rises a wrinkled conical fleshy protuberance, with a pencil of hairs at the tip. This protuberance, when the bird is at rest, does not exceed an inch and a half in length, but on any excitement becomes elongated to such an extent as to cover the bill entirely, and to depend below it for several inches. The lower part of the neck, at its junction with the breast, is ornamented by a singular tuft of black rigid hairs, separating themselves from the feathers, and reaching as much as nine inches in length. The feathers of the body are long and truncated, and, generally speaking, may each be subdivided into four parts. Their base is formed by a light fuliginous down, which is followed by a dusky portion. This again is succeeded by a broad shining metallic band, changing to copper-colour or bronze, to violet or purple, according to the incidence of the light; while the tip is formed by a narrow black velvety band, which last is wanting on the neck and breast. From this disposition of the colours results a most beautiful changeable metallic gloss over the whole body of the bird, which is, however, less marked on the lower part of the back and tail-coverts.

"The wings, which scarcely extend beyond the base of the tail, are concave and rounded. They are furnished with twenty-eight quill-feathers; the primaries are plain blackish banded with white, while the secondaries have the relative extent of these markings so reversed that they may be described as white banded with blackish; and tinged, especially towards the back, with brownish-yellow. The tail measures more than fifteen inches in length, is rounded at the extremity, and consists of eighteen broad feathers, which, when expanded and elevated, assume the form of a fan. It is brown, mottled with black, and crossed by numerous narrow undulating lines of the same. Near the tip is a broad black band, then follows a short mottled portion, and lastly a broad dingy yellowish band. The feet are robust, have blunt spurs about an inch in length, and are of a red colour, with blackish margins to the scales, and claws of the same dusky hue. The bill is reddish, and horn-coloured at the tip; and the irides are dark brown.

"The female is considerably smaller, not exceeding three feet and a quarter in length. Her bill and legs are less robust, the latter without any rudiment of a spur; and her irides similar to those of the male. Her head and neck are less denuded, being covered by short decomposed feathers of a dirty gray. Those of the back of the neck have brownish tips, producing a longitudinal band on that part.

The caruncle on the forehead is short, and incapable of elongation; and the fasciculus on the breast is not always present. The prevailing tinge of the plumage is dusky gray; each feather having a metallic band, less brilliant than that of the male, then a blackish band, and a grayish terminal fringe. On the feathers of the neck and under surface the black band is for the most part obliterated. All the parts, without exception, are duller than those of the male; less white exists on the primary wing-feathers, and the secondaries are entirely destitute of bands. The tail is similar in colour to that of the male.

"Until the naked membrane acquires its tinge of red, it is not easy to distinguish between the two sexes; but on the approach of the first winter, the young males show a rudiment of the tuft of hairs upon the breast, consisting at first of a mere tubercle; in the second year the tuft is about three inches long; and in the third the bird attains its adult form, although it certainly continues to increase in size and beauty for several years. Females have their full size and colouring at the end of four years; they then possess the pectoral fascicle, four or five inches in length, but much thinner than in the male. This appendage is more frequently observed, and is acquired at an earlier period of life, in the wild than in the domestic female."

The following important features of the history of the Turkey, are selected from the account furnished by Mr. Audubon, who it appears has studied the habits, and written more largely, of that bird than any other natural historian.

"About the middle of April, when the season is dry, the hens begin to look out for a place in which to deposit their eggs. This place requires to be as much as possible concealed from the eye of the Crow, as that bird often watches the Turkey when going to her nest, and, waiting in the neighbourhood until she has left it, removes and eats the eggs. The nest, which consists of a few withered leaves, is placed on the ground, in a hollow scooped out, by the side of a log, or in the fallen top of a dry leafy tree, under a thicket of sumach or briars, or a few feet within the edge of a cane-brake, but always in a dry place. The eggs, which are of a dull cream colour, sprinkled with red dots, sometimes amount to twenty, although the more usual number is from ten to fifteen. When depositing her eggs the female always approaches the nest with extreme caution, scarcely ever taking the same course twice, and when about to leave them, covers them carefully with leaves, so that is very difficult for a person who may have seen the bird to discover the nest. Indeed few Turkeys' nests are found, unless the female has been suddenly started from them, or a cunning lynx, fox, or crow, has sucked the eggs, and left their shells scattered about.

"Turkey hens not unfrequently prefer islands for depositing their eggs and rearing their young, probably because such places are less frequented by hunters, and because the great masses of drifted timber which usually accumulate at their heads, may protect and save them in cases of great emergency.

"When an enemy passes within sight of a female, while lying or sitting, she never moves, unless she knows that she has been discovered, but crouches lower until he has passed. I have frequently approached within five or six paces of a nest, of which I was previously aware, on assuming an air of carelessness, and whistling or talking to myself, the female remaining undisturbed; whereas if I went cautiously towards it, she would never suffer me to approach within twenty paces, but would run off, with her tail spread on one side, to a distance of twenty or thirty yards, when assuming a stately gait, she would walk about deliberately, uttering every now and then a cluck. They seldom abandon their nest, when it has been discovered by men; but, I believe, never go near it again, when a snake or other animal has sucked any of the eggs. If the eggs have been destroyed or carried off, the female soon yelps again for a male; but, in general, she rears only a single brood each season. Several hens sometimes associate together, I believe for their mutual safety, deposit their eggs in the same nest, and rear their broods together. I once found three sitting on forty-two eggs. In such cases, the common nest is always watched by one of the females, so that no crow, raven, or perhaps even pole-cat, dares approach it.

"The mother will not leave her eggs, when near hatching, under any circumstances, while life remains. She will even allow an enclosure to be made around her, and thus suffer imprisonment, rather than abandon them. I once witnessed the hatching of a brood of Turkeys, which I watched for the purpose of securing them, together with the parent. I concealed myself on the ground within a very few feet, and saw her raise herself half the length of her legs, look anxiously upon the eggs, and cluck with a sound peculiar to the mother on such occasions, carefully remove each half-empty shell, and with her bill caress and dry the young birds, that already stood tottering and attempting to make their way out of the nest. Yes, I have seen this, and have left mother and young to better care than mine could have proved;—to the care of their Creator and mine. I have seen them all emerge from the shell, and in a few moments after, tumble, roll, and push each other forward, with astonishing and inscrutable instinct.

"Before leaving the nest with her young brood, the mother shakes herself in a violent manner, picks and adjusts the feathers about her belly, and assumes quite a different aspect. She alternately inclines her eyes obliquely upwards and sideways, stretching out her neck to discover hawks or other enemies, spreads her wings a little as she walks, and softly clucks to keep her innocent offspring close to her. They move slowly along, and as the hatching generally takes place in the afternoon, they frequently return to the nest to spend the first night there. After this, they remove to some distance, keeping on the highest undulated grounds, the mother dreading rainy weather, which is extremely dangerous to the young, in this tender state, when they are only covered by a kind of soft hairy down, of surprising delicacy. In very rainy seasons, Turkeys are scarce, for if once completely wetted, the young seldom recover. To prevent the disastrous effects of rainy weather, the mother, like a skilful physician, plucks the buds of the spice-wood bush, and gives them to her young,

"In about a fortnight, the young birds, which had previously rested on the ground, leave it, and fly, at night, to some very large low branch, where they place themselves under the deeply-curved wings of their kind and careful parent, dividing themselves for that purpose into two nearly equal parties. After this, they leave the woods during the day, and approach the natural glades or prairies, in search of strawberries, and subsequently of dewberries, blackberries, and grasshoppers, thus obtaining abundant food, and enjoying the beneficial influence of the sun's rays. They roll themselves in deserted ants' nests, to clear their growing feathers of the loose scales, and prevent ticks and other vermin from attacking them, these insects being unable to bear the odour of the earth in which ants have been.

"The young Turkeys now advance rapidly in growth, and in the month of August are able to secure themselves from unexpected attacks of wolves, foxes, lynxes, and even cougars, by rising quickly from the ground, by the help of their powerful legs, and reaching with ease the highest branches of the tallest trees. The young cocks show the tuft on the breast about this time, and begin to gobble and strut, while the young hens pur and leap in the manner which I have already described.

"About the beginning of October, when scarcely any of the seeds and fruits have yet fallen from the trees, these birds assemble in flocks, and gradually move towards the rich bottom lands of the Ohio and Mississippi. The males, or as they are more commonly called, the *gobblers*, associate in parties of from ten to a hundred, and search for food apart from the females; while the latter are seen either advancing singly, each with its brood of young, then about two-thirds grown, or in connexion with other families, forming parties often amounting to seventy or eighty individuals, all intent on shunning the old cocks, which, even when the young birds have attained this size, will fight with, and often destroy them by repeated blows on the head. Old and young, however, all move in the same course, and on foot, unless their progress be interrupted by a river, or the hunter's dog force them to take wing. When they come upon a river, they betake themselves to the highest eminences, and there often remain a whole day, or sometimes two, as if for the purpose of consultation. During this time, the males are heard *gobbling*, calling, and making much ado, and are seen strutting about, as if to raise their courage to a pitch befitting the emergency. Even the females and young assume something of the same pompous demeanour, spread out their tails and run round each other, *purring* loudly, and performing extravagant leaps. At length, when the weather appears settled, and all around is quiet, the whole party mounts to the tops of the highest trees, whence at a signal, consisting of a single *cluck*, given by a leader, the flock takes flight for the opposite shore. The old and fat birds easily get over, even should the river be a mile in breadth, but the younger and less robust, frequently fall into the water,—not to be drowned, however, as might be imagined. They bring their wings close to their body, spread out their tail as a support, stretch forward their neck, and striking out their legs with great vigour, proceed rapidly towards the shore, on approaching which, should they find it too steep for landing, they cease their exertions for a few moments, float down the stream until they come to an accessible part, and by a violent effort generally extricate themselves from the water. It is remarkable, that immediately after thus crossing a large stream, they ramble about for some time, as if bewildered. In this state, they fall an easy prey to the hunter.

"When the Turkeys arrive in parts where the mast is abundant, they separate into smaller flocks, composed of birds of all ages and both sexes, promiscuously mingled, and devour all before them. This happens about the middle of November. So gentle do they sometimes become after these long journeys, that they have been seen to approach the farm-houses, associate with the domestic fowls, and enter the stables and corn-cribs in quest of food. In this way, roaming about the forests, and feeding chiefly on mast, they pass the autumn and part of the winter.

"As early as the middle of February, they begin to experience the impulse of propagation. The females separate, and fly from the males. The latter strenuously pursue, and begin to gobble or to utter the notes of exulta-

tion. The sexes roost apart, but at no great distance from each other When a female utters a call-note, all the gobblers within hearing return the sound, rolling note after note with as much rapidity as if they intended to emit the last and the first together, not with spread tail, as when fluttering round the females on the ground, or practising on the branches of the trees on which they have roosted for the night, but much in the manner of the domestic Turkey, when an unusual or unexpected noise elicits its singular hubbub. If the call of the female comes from the ground, all the males immediately fly towards the spot, and the moment they reach it, whether the hen be in sight or not, spread out and erect their tail, draw the head back on the shoulders, depress their wings with a quivering motion, and strut pompously about, emitting at the same time a succession of puffs from the lungs, and stopping now and then to listen and look. But whether they spy the female or not, they continue to puff and strut, moving with as much celerity as their ideas of ceremony seem to admit. While thus occupied, the males often encounter each other, in which case desperate battles take place, ending in bloodshed, and often in the loss of many lives, the weaker falling under the repeated blows inflicted upon their head by the stronger.

"I have often been much diverted, while watching two males in fierce conflict, by seeing them move alternately backwards and forwards, as either had obtained a better hold, their wings drooping, their tails partly raised, their body-feathers ruffled, and their heads covered with blood. If, as they thus struggle, and gasp for breath, one of them should lose his hold, his chance is over, for the other, still holding fast, hits him violently with spurs and wings, and in a few minutes brings him to the ground. The moment he is dead, the conqueror treads him under foot, but, what is strange, not with hatred, but with all the motions which he employs in caressing the female.

"Turkey-cocks when at roost sometimes strut and gobble, but I have more generally seen them spread out and raise their tails, and emit the pulmonic puff, lowering their tail and other feathers immediately after. During clear nights, or when there is moonshine, they perform this action at intervals of a few minutes, for hours together, without moving from the same spot, and indeed sometimes without rising on their legs, especially towards the end of the love-season. The males now become greatly emaciated, and cease to gobble, their *breast-sponge* becoming flat. They then separate from the hens, and one might suppose that they had entirely deserted their neighbourhood. At such seasons I have found them lying by the side of a log, in some retired part of the dense woods and cane thickets, and often permitting one to approach within a few feet. They are then unable to fly, but run swiftly, and to a great distance. A slow Turkey-hound has led me miles before I could flush the same bird. Chases of this kind I did not undertake for the purpose of killing the bird, it being then unfit for eating, and covered with ticks, but with the view of rendering myself acquainted with its habits. They thus retire to recover flesh and strength, by purging with particular species of grass, and using less exercise. As soon as their condition is improved, the cocks come together again, and recommence their rambles.

"Turkeys are now generally extremely shy, and the moment they observe a man, whether of the red or white race, they instinctively move from him. Their usual mode of progression is what is termed walking, during which they frequently open each wing partially and successively, replacing them again by folding them over each other, as if their weight were too great. Then, as if to amuse themselves, they will run a few steps, open both wings, and fan their sides, in the manner of the common fowl, and often take two or three leaps in the air and shake themselves. Whilst searching for food among the leaves or loose soil, they keep their head up, and are unremittingly on the look-out; but as the legs and feet finish the operation, they are immediately seen to pick up the food, the presence of which, I suspect, is frequently indicated to them, through the sense of touch in their feet, during the act of scratching. This habit of scratching and removing the dried leaves in the woods, is pernicious to their safety, as the spots which they thus clear, being about two feet in diameter, are seen at a distance, and, if fresh, show that the birds are in the vicinity. During the summer months they resort to the paths or roads, as well as the ploughed fields, for the purpose of rolling themselves in the dust, by which means they clear their bodies of the ticks, which at that season infest them, as well as free themselves of mosquitoes, which greatly annoy them, by biting their heads.

"When Turkeys alight on a tree, it is sometimes very difficult to see them, which is owing to their standing perfectly motionless. Should you discover one, when it is down on its legs upon the branch, you may approach it with less care. But if it is standing erect, the greatest precaution is necessary, for should it discover you, it instantly flies off, frequently to such a distance that it would be vain to follow.

"Turkeys are easily killed if shot in the head, the neck, or the upper part of the breast; but if hit in the hind parts only, they often fly so far as to be lost to the hunter. During winter many of our *real* hunters shoot them by moonlight, on the roosts, where these birds will fre-

quently stand a repetition of the reports of a rifle, although they would fly from the attack of an owl, or even perhaps from his presence. Thus sometimes nearly a whole flock is secured by men capable of using these guns in such circumstances. They are often destroyed in great numbers when most worthless, that is, early in the fall or autumn, when many are killed in their attempts to cross the rivers, or immediately after they reach the shore.

"During spring Turkeys are *called*, as it is termed, by drawing the air, in a particular way, through one of the second joint bones of a wing of that bird, which produces a sound resembling the voice of the female, on hearing which the male comes up, and is shot. In managing this, however, no fault must be committed, for Turkeys are quick in distinguishing counterfeit sounds, and, when *half-civilized*, are very wary and cunning. I have known many to answer to this kind of call, without moving a step, and thus entirely defeat the scheme of the hunter, who dared not move from his hiding-place, lest a single glance of the gobbler's eye should frustrate all further attempts to decoy them. Many are shot when at roost, in this season, by answering with a rolling gobble to a sound in imitation of the cry of the Barred Owl.

"But the most common method of procuring Wild Turkeys, is by means of *pens*. These are placed in parts of the woods where Turkeys have been frequently observed to roost, and are constructed in the following manner. Young trees of four or five inches diameter are cut down, and divided into pieces of the length of twelve or fourteen feet. Two of these are laid on the ground parallel to each other, at a distance of ten or twelve feet. Two other pieces are laid across the ends of these, at right angles to them; and in this manner successive layers are added, until the fabric is raised to the height of about four feet. It is then covered with similar pieces of wood, placed three or four inches apart, and loaded with one or two heavy logs to render the whole firm. This done, a trench about eighteen inches in depth and width is cut under one side of the cage, into which it opens slantingly and rather abruptly. It is continued on its outside to some distance, so as gradually to attain the level of the surrounding ground. Over the part of this trench within the pen, and close to the wall, some sticks are placed so as to form a kind of bridge about a foot in breadth. The trap being now finished, the owner places a quantity of Indian corn in its centre, as well as in the trench, and as he walks off drops here and there a few grains in the woods, sometimes to the distance of a mile. This is repeated at every visit to the trap, after the Turkeys have found it. Sometimes two trenches are cut, in which case the trenches enter on opposite sides of the trap, and are both strewn with corn. No sooner has a Turkey discovered the train of corn, than it communicates the circumstance to the flock by a cluck, when all of them come up, and searching for the grains scattered about, at length come upon the trench, which they follow, squeezing themselves one after another through the passage under the bridge. In this manner the whole flock sometimes enters, but more commonly six or even only, as they are alarmed by the least noise, even the cracking of a tree in frosty weather. Those within, having gorged themselves, raise their heads, and try to force their way through the top or sides of the pen, passing and repassing on the bridge, but never for a moment looking down, or attempting to escape through the passage by which they entered. Thus they remain until the owner of the trap arriving, closes the trench, and secures his captives.

"The weight of Turkey-hens generally averages about nine pounds avoirdupois. I have, however, shot barren hens, in strawberry season, that weighed thirteen pounds, and have seen a few so fat as to burst open on falling from a tree when shot. Male Turkeys differ more in their bulk and weight. From fifteen to eighteen pounds may be a fair estimate of their ordinary weight. I saw one offered for sale in the Louisville market that weighed thirty-six pounds. Its pectoral appendage measured upwards of a foot.

For the Cabinet of Natural History.

A HUNTING EXCURSION ON ONE OF THE CORDILLERAS.

Mr. Editor:—The following extract is from a journal, kept during a short residence in Colombia; but at the time it was penned, I did not intend it for publication. If, however, you find it sufficiently interesting, and suitable for the pages of your work, I shall be happy in making the contribution.

"I was one of a party of adventurers which sought their fortunes in South America,—having set sail from Boston in 18—, and landed at Laguayra after a passage of a few weeks. My original design was to rest at Caraccas, an inland city of the province of Venezuela, during my residence in Colombia. I therefore remained in the former town only a sufficient time to land my goods, and prepare them for transportation to the latter city.

"The distance between Laguayra and Caraccas is only a few miles, but the road is mountainous and difficult, and

requires several hours to make the passage. The latter city is the capitol of the province, and is situated on the slope of a mountain, and in fact rests in a valley formed by the mountain you cross in going to it, and another higher mountain south a few miles, the towering summits of which, during a clear atmosphere, form a beautiful prospect, and seem to overhang the city. This mountain is called the *Silla*, and is the north-eastern termination of the great range of the Andes, and rises to the height of about 9000 feet above the sea.

"During the few months I remained at Caraccas, it was proposed by one of my friends that I should join him in an excursion to this mountain, not only to behold the beautiful scenery, which an ascent would unfold to view, but spend a few days to range the table lands and promontories in hunting some of the wild animals known to abide in that region. Accordingly we made every preparation necessary for the occasion, and, accompanied by a guide, we departed on the appointed day towards the summit of the Silla. We had arranged matters so, that by starting at sunrise, we should be able to make a tolerable ascent before night, and on the next day, if not able to reach the summit of the mountain, go at least to the boundary of vegetation and back again to our resting place before the evening.

"Born in the wild and mountainous regions of my own happy land, I had learned from childhood, to scale the rugged sides of the green hills in Vermont, (my native state,) and wend the toilsome way after game, as often in fruitless as successful pursuit, the characteristic features of those highlands having made hunting a necessary part in the life of every resident there. It was, therefore, not without peculiar sensations of pleasure, that an occasion was presented to vary the scene of action, especially as it was so eminently calculated to recal to mind the incidents I had so often experienced at home.

"My companion was one whose friendship I had tested, and whose energies were unabating, and to whom I had formed a sincere attachment, which became mutual, and strengthened by absence from home and a residence among strangers; and in the enjoyment of these social ties, we passed much of our time together, without mixing with the heterogeneous inhabitants of Caraccas.

"The day was remarkably fine, and by three o'clock, P. M. found we had made great progress in our ascent, although we had overcome many difficult passages over rocks, across savannas, and through almost impenetrable vegetation; we therefore resolved on halting for half an hour, previous to another and last attempt for that day. We then pursued our course with a view to reach a spot, known as a resting place at night for travellers. In this we succeeded about seven o'clock, and made preparations to remain for the night. Our intention was to complete, if possible, the ascent of the mountain, without deviating from a direct course, and spend no time in hunting until after we had descended nearer the base of the mountain; but on the above evening we had reached our goal at an earlier period than we had anticipated; and being enticed by a neighbouring promontory, we determined to reach its summit, and take a survey of the surrounding country. We therefore buckled on our accoutrements, shouldered our guns, and with our guide directed our footsteps successfully to this elevated spot.

"The sun had sunk behind the great western mountains, and we could see his traces no where but by the golden tinges of a few flying clouds. Mildness and serenity reigned throughout the vast expanse which lay beneath our feet, and no living creature animated the scene but a few king-vultures, which were hovering around and over us. We sat musing, wrapt up as we were by the grandeur of the scenery, which to the east was bounded only by the distant horizon of the sea, while we computed our elevation at upwards of six thousand feet. My companion's feelings were completely in unison with mine; but our more thoughtless guide found pleasure only in searching the sides of the mountain for a number of small smooth stones. At this interesting period, our attention was attracted by an animal that had just emerged from a thicket close to our left, and seemed totally unconscious of the presence of an enemy. It was a small deer, (*Cervus Mexicanus*,) and was browsing on the variety of herbs, which grew in great abundance, and might properly be called Alpine plants. The eyes of my companion and mine met at the same moment; and with smiles expressive of surprise at the new visitor, we hesitated to commit any violence, so little were we prepared in our feelings to effect its death. Poor little innocent!—it had perhaps just risen from its lair, on the approach of twilight, to satisfy the cravings of appetite, and enjoy the bounteous repast which nature had spread before it, unconscious of attending danger. In a moment, however, it was stricken to the earth by a tiger, or jugular, which no doubt had been so intent on its prey as to be unheedful of every thing else. We instantly rose from our seats, and discharged our guns simultaneously at the monster, and killed it.

"Our guide, whose attention was attracted by the animal as it sprung on its victim, and by the victorious growl in securing it, had become so panic struck, that he did not notice the report of our guns, but sunk on his knees and crossing himself, offered up constant ejaculations, addressing himself sometimes in these terms—'Oh! holy virgin, why have you permitted me to be led by these heretics

into this great danger; these must be wicked men, or you would not pass such judgment upon them; but what have I done, that I should share the punishment due to their crimes.'

"The earnestness of this bigot, and his want of charity, excited our laughter,—and it was some time before the coward could be convinced that we had killed the animal, or even get him to turn his face towards it. After his fears had subsided, however, he assisted us in getting the animal to our cave, where we skinned it, and threw the carcase to be devoured by the vultures. We had thus enjoyed one of the most splendid views on earth, and been unexpectedly successful in destroying an animal, that not unfrequently caused terror among some of the inhabitants of the country, and were therefore anxious to preserve the skin, as an evidence of our success, to be exhibited on our return to our friends.

"After drawing on our humble store of provisions, we endeavoured to repose for the remainder of the night, preparatory to a very early start the next morning for the completion of our ascent of the mountain. We were disturbed, about day-break, by our guide, who had just risen, and, departing from the cave, left us altogether, and returned home. This man was a native Indian, but had become a proselyte to the Roman Church, and belonged to one of the missionary establishments near Caraccas; in consequence of which he had made some progress in the knowledge of the Spanish language, and him, with those of his fellows who had shared like advantages, were more often chosen as guides than the other inhabitants; but, as in the instance cited, they often proved faithless, and sometimes treacherous. We suspected him of cowardice several times, for on different occasions he warned us of dangers and saw difficulties when neither were at hand; but we dreamed not that he would forsake us or the protection we were able to afford him. In this unexpected dilemma, we were somewhat at a loss to decide, whether to persevere in ascending the mountain, or finish our hunting, while we gradually approached the city. We however decided on the former course, as a successful attempt was a consummation which but few had experienced. We therefore, shortly after day-break, started on our enterprise of ascending the mountain, and continued our passage slowly and steadily until ten o'clock. We had consumed about six hours, and finding our difficulties increasing so fast, we were convinced that we had mistaken the proper course, and resolved to retrace our steps. Although the temperature was not above 50°, we had laboured so hard during the last hour, that we perspired profusely. We had now passed the boundary of vegetation;—all beyond were rocks and precipices, insurmountable by human effort,—and the greatest exertion would not convey us but a few hundred feet further up the mountain; we therefore tarried about half an hour, to take another view of the country before us, and then begin our retrograde movements. We continued descending until nearly one o'clock, and discovered at length that we had also lost our backward track; this caused us to halt, and endeavour to find the proper course,—but failing in this, we proceeded on our way.

"It was two o'clock, and the clouds, which for half an hour had began to thicken about the mountain's brow, now rolled furiously immediately over our heads, impelled by a wind that prostrated the decayed trunks of trees, and leafy branches, with the violence of a hurricane. We were convinced a fearful storm of rain would follow, and we lost no time in seeking refuge from it among the crevices of the rocks. The rain soon began to fall in torrents, which continued, with unabated vehemence, for nearly two hours, and then gave way to a clear sunshine and a cloudless sky, so that we renewed our descent. But new difficulties presented themselves, that we did not calculate would be so unpleasant. The fissures and ravines of the mountain were now streams of water, which before were dry and parched; places had become slippery and dangerous, on which before we could have placed our feet with firmness and safety; and, worst of all, we had arrived on the brink of a ravine, so broad and deep, and withal foaming with cataracts and flood, that made the head giddy to behold. This gulf was the receptacle of all the storm-created streams that flowed down the northern side of the mountain, and the concentration of these waters had formed a terrible and angry deluge. We had no alternative but to go up or down, along the edges of the frightful precipice of this abyss,—so we determined on the former, as most likely to reach the much desired path we had trodden while ascending the mountain, but we now encountered a new difficulty that was far more formidable than any thing we had yet contended with.

"It is a remarkable feature of that climate, especially among the highlands, that mists and fogs arise suddenly after storms, with a density that almost precludes belief; but whether these are caused by the influence of a vertical sun, assisted by the heat of the rocks over which these waters flow, that produce a sudden evaporation, I cannot decide; nor have I ever heard it satisfactorily accounted for. But in one of these vapours my friend and self were doomed to be involved, and one too, that was so impervious to vision, as to preclude us from distinguishing any object more than a few feet distance. We had by this time reached a platform of the rock, and thinking it exceedingly hazardous to persevere in our efforts, I earnestly

besought my companion that we should remain in our present situation until the mists were dissipated. But my entreaties were made in vain, and he seemed resolved to persevere, and reach our correct path before night, or perish in the attempt. Fatal resolution! He had advanced but a few feet, when, mistaking the density of the curling mist for the solid rock, he stepped aside, and was plunged into the frightful abyss! The only words that struck my ears were, 'help!—help!—oh!—oh!' and the thunder of the waters hushed his voice for ever. Who can describe the anguish of my feelings at that fearful moment? I could not see, much less could I render him any assistance. Horror-stricken and agonized, I threw myself, in the listlessness of sorrow, down upon the rock, and could only give vent to my feelings by groans and convulsive sighs. The bitterness of wo had dried my tears, and I could find no relief whithersoever I turned my aching head. Thus I passed a night the most eventful and wretched of my life. Towards day I fell asleep through exhaustion, but was aroused about ten o'clock by the shrill blast of a bugle, and springing on my feet, I saw, a short distance from me, a group of men with some mules. These proved to be some friends, who had become alarmed for our safety on discovering the storm on the mountain; and learning that our guide had returned without us, set out themselves to find and bring us home.——I told them my melancholy tale."

Years have since gone apace—and thou, my friend, art passed to oblivion with the rest of departed humanity—but the fearfulness of that night often rests upon me when my weary limbs are stretched upon the couch. I sometimes hear thy cry of 'help!' and the roaring waters singing thy requiem—and, in the eagerness to save thee from that dreaded abyss, I make an effort to grasp thee in thy fall, when the energies of my spirit awaken me from the delirium of a dream. M. D.

Boston, Sept. 1833.

GAME LAWS OF MARYLAND.

An Act for the preservation of Wild Fowl in the waters of Swan Creek, Spisutie Narrows, Rumney Creek, Bush River, and Gunpowder River, in Harford County. Cap. 161.

"Section 1. Be it enacted by the General Assembly of Maryland, That from and after the first day of September next, it shall not be lawful for any person to shoot at Wild Fowl in the waters of Swan Creek, Spisutie Narrows, Rumney Creek, Bush River, and Gunpowder River, with a gun of any description, in the night time, except from the land.

"Section 2. And be it enacted, That it shall not be lawful for any person either in the day or at night, to shoot at Wild Fowl in any of the waters of the rivers, creeks, and narrows, aforesaid, with any gun, from a skiff, float, or other boat, which may not be conveniently fired at arm's length, without a rest. And any person violating the provisions of this act, shall be taken before some justice of the peace of said county, whose duty it shall be to require of such offender to surrender such gun, to him the said justice, to be sold; the proceeds of which sale said justice shall pay over the one-half to the informer; the other half to the commissioners of said county; and, in case of neglect or refusal of such offender to surrender such gun, it shall be the duty of the said justice to sentence him to imprisonment in the county jail for thirty days, unless he sooner delivers up said gun, according to the provisions of this act."

For the Cabinet of Natural History.

"THE HONEST ANGLER."

Mr. Editor:—There is something so peaceful and quiet in the occupation of the *Angler*, that the very name appears to invite contemplation. It has always been remarked, and I believe with truth, that the character of your *genuine Angler* is generally kind and benevolent, partaking, in some measure, of the nature of his harmless sports.

"Honest *Izaak Walton*," the father of all Anglers, says, that the talent is more of a natural than an acquired one—that "it is like poetry; *men are born so*"—and surely "Honest Izaak" knew best.

On the banks of the Wabash, (only a few hundred miles west of us,) an accident lately happened to one of the "*gifted few*," which is likely to bring some scandal on the fraternity, and expose the brethren to the sneers of the uninitiated.

A fine old gentlemen, and most indefatigable Angler, who made a fishing excursion to the river almost every day, whether the fish bit or not, went out one warm afternoon to fish for eat, baited with a large live frog, the hook fastened to one of its legs.

One of those queer, quizzing, and ruthless fellows, who

mind every body's business but their own—and who take an especial fancy to vex quiet people, particularly Anglers—followed, after some time, in the wake of the old gentleman, to watch his motions, as he said. At last he found him, seated on his favourite rock, close by the water's edge, with his rod stuck in the bank, resting between his knees. The frog, tired of playing in the water, had crawled out—and prevented by the line from going further, was sitting very gravely alongside of the "Honest Angler"—who was *fast asleep!*—dreaming, no doubt, of "monstrous fine bites."

I have seen a pencil sketch of "the pair;" it is graphic and amusing—

"Oh! the jolly Angler's life,
It is the best of any." WALTON.

B.

Cincinnati, June 8th, 1833.

CURIOUS CONTEST BETWEEN A FERRET AND A POLECAT.

IT was a fine afternoon in autumn, when I took my fowling-piece, slung a couple of shooting-bags at my back, put a well sized buck ferret in one of them, and hastened to an extensive wood, amidst the high mountains of Wales, which was well stocked with rabbit-burrows.

This to me is a species of sport in which I delight. My little industrious ferret was neither expensive nor troublesome to keep, and none of my dogs were surer of finding their game than he.

I entered upon my ground with the utmost caution, lest those rabbits which are already out of their burrows should be too soon frightened into them; for when this is the case it is hard to make them bolt, and they will suffer themselves to be gnawed by the ferret before they will quit their hiding places.

Arriving on my ground, I hid myself, and waited until I saw two or three rabbits go of their own accord into one burrow. I then, with the least possible noise, got to the spot, and let the ferret in unmuzzled.

This is not a usual method, for muzzling is generally preferred. But I found that when the rabbit refuses to bolt, and has taken refuge at the further end of his burrow, the ferret will remain in, scraping the fur off his back with his paws, and after he has exhausted his strength in so doing, will lay down to rest and sometimes sleep. On the other hand, when unmuzzled, he forces the prey out by fastening on its neck, or stern.

It had not been long in when a rabbit bolted. I shot him, and before I had time to seize my prey, another popped out a few yards off. A shot from the left-hand barrel secured him. And thus I continued until I had bagged two couple.

I now sat down for awhile to enjoy the beauteous scenery about me, and to gaze upon the splendour of the lofty mountains on the opposite side of a small valley which separated me from them. My ferret was, as I had imagined, safely tied up in his bag not far from my side. But the busy rogue had made his way out, and I just had a glimpse of his tail, as he entered a fresh burrow.

Before I could recover him, he had disappeared; I waited some time in the hope of seeing a rabbit—none appearing, I concluded my little slave had slept in the burrow. I stamped on the ground, hallooed in the holes to disturb him, but in vain; at length I applied my ear to listen.

After remaining some time in this position, I heard a faint noise. It resembled the squeak of a ferret. I was all astonishment; and could not account for it. I listened again—the noise grew louder—and as if coming from more than one animal. Presently, I observed the ferret's tail, and soon after saw that he was struggling hard to bring something out of the burrow.

I thought it was a rabbit. The ferret continued dragging his prize to the mouth of the hole; when to my astonishment, I found him closely interlocked with a male polecat; they had fastened like bull-dogs on each other's necks.

The polecat, when he saw me, did not quit his hold, but redoubled his efforts, and dragged the ferret back into the earth, and the squeaking was resumed.

I now feared for the ferret's life, but soon observed him again bringing his opponent to the mouth of the hole. I drew back, hoping he might be brought out for me to take, or shoot. The reverse, however, happened; the polecat again rallied, kept his hold fast, and the belligerent parties once more disappeared.

I neither saw nor heard any thing of them for some time, and again feared for my little champion's life. But a third time I saw him lugging out his adversary with increased vigour. He brought him to the mouth of the hole; a desperate struggle ensued,—and just as I expected to see the polecat defeated, the ferret, quite exhausted, relinquished the combat, and came hopping towards me, considerably mangled about the throat; his enemy did not dare to follow him, but stood deliberately snuffing up the air, at the mouth of his burrow. I took aim at him, and, strange to tell, my gun missed fire at least four or five times, when the litile hero, turning quickly round, escaped into the earth; foiling both auxiliaries, my ferret and my gun.

I attribute the defeat of the ferret to the inevitable loss

of vigour, which every animal must suffer when confined under the dominion of man, and restrained from those habits of invariable instinct which, in their natural state, produce in them the greatest height of perfection.

[*Annals of Sporting.*

THE SPEED AND STRENGTH OF THE OSTRICH.

Sports and pastimes, which appear to be varied according to situation, the genius of the people, or other circumstances, not necessary now either to investigate or detail, seem natural to all countries. Thus, while an English sportsman is delighted with the chase of the fox, the Greenlander experiences pleasure in pursuing the seal; the inhabitants of New South Wales in coursing the kangaroo, the Arab of the Desert feels sensations equally agreeable in following, upon his beautiful steed, the half-running, half-flying ostrich.

If we are to place confidence in travellers' tales, the ostrich is swifter than the Arabian horse; and that when the Arabs chase this bird, they do not immediately pursue it in a straight direction, but by turning and twisting, and assisting each other, they accomplish that which, by a direct pursuit they would vainly strive to attain. I must confess I have some difficulty in placing confidence in relations which would make us believe that the ostrich is swifter than the Arabian horse, or our English racer.

During the time of Mr. Adamson's residence at Podor, a French factory on the south side of the river Niger, he says, that two ostriches, which had been about two years in the factory, afforded him a sight of a very extraordinary nature. These gigantic birds, though young, were of nearly the full size. "They were (he continues) so tame, that two little blacks mounted both together on the back of the larger. No sooner did he feel their weight than he began to run as fast as possible, and carried them several times round the village; and it was impossible to stop him, otherwise than by obstructing the passage. This sight pleased me so much that I wished it to be repeated; and, to try their strength, directed a full-grown negro to mount the smallest, and two others the larger. This burden did not seem at all disproportioned to their strength. At first, they went at a pretty sharp trot; but when they became heated a little, they expanded their wings as though to catch the wind, and moved with such fleetness, that they scarcely seemed to touch the ground. Most people have, one time or other, seen the partridge run; and, consequently, must know there is no man whatever able to keep up with it: and it is easy to imagine, that if this bird had a longer step, its speed would be considerably augmented. The ostrich moves like the partridge with this advantage; and I am satisfied, that those I am speaking of would have distanced the fleetest race-horses that were ever bred in England. It is true, they would not hold out so long as a horse, but they would, undoubtedly, be able to go over the space in less time. I have frequently beheld this sight, which is capable of giving one an idea of the prodigious strength of the ostrich, and of showing what use it might be of, had we but the method of breaking and managing it as we do the horse."—*Ibid.*

INSTRUCTIONS TO YOUNG SPORTSMEN.

No. VII.

In the present number of my instructions, I shall confine myself to *Grouse Shooting*—embracing, under that head, the variety of these birds found in different parts of this country. I shall, therefore, impress on your mind, that there are already six different species of Grouse found in the United States, and the territories belonging to it, viz. the Ruffed Grouse—the Pinnated Grouse—the Spotted Grouse—the Dusky Grouse—the Sharp-tailed Grouse—and the Cock of the Plains. The most common on this list is the *Ruffed Grouse*, and is much better known throughout the country than any of the other species. It is that bird which is usually called and known as the Pheasant, and is found in every state of the Union, more particularly in the northern, middle, and western states. It is a bird at all times difficult of access, except when it is met in an undisturbed state in the wilds of the country, and it sees man for the first time; but in populous parts, it generally seeks the most dense thickets of low lands, and difficult parts of hills and mountains,—and its shy and solitary disposition renders it one of the most difficult birds to shoot, as it always shuns the traveller or sportsman, and seeks shelter in places almost inaccessible.

To hunt the Ruffed Grouse successfully, two persons should be employed, and with but one good, careful old dog, that will not run far ahead; and as these birds mostly resort to swampy thickets in the midst of woods, it will be well for one to go on each side of the same, while the dog is cautiously hunting the centre. You must not suffer your dog to range too far from you, as the bird, before it

takes flight, will frequently run a short distance, and then dart off with incredible velocity. Should you be hunting on hill sides, one should always hunt at the base, and the other some distance up, or on the hill-top,—the former keeping in advance of his companion and dog, for it often occurs, that the bird will rise some distance ahead of the object that appears to be following it, and an opportunity is thus afforded to the advanced Sportsman of getting a favourable shot, while the other can view the course the bird may take, in case it should escape.

A Pheasant will always fly in an opposite direction to its pursuer; but if two are thus hunting, it is more than probable the bird will make its line of flight direct between them, and give, perhaps, both shooters an opportunity of killing it. These birds will sometimes settle in trees or bushes, when driven up by a dog, merely to avoid the same, as it would every other enemy of the brute kind; but if the bird does this, you may rest assured it is either insensible of human presence, or ignorant as yet of its nature. For in almost every instance, the bird rushes from the voice and footsteps of man, as its most dreaded enemy.

Although this Grouse is a solitary bird, it often happens, late in the fall, two, or even more, will associate together,—and whenever the Sportsman, at this time, should spring one bird, he should always be on the alert for another.

At the close of September, and until the middle of October, I have found these birds yet congregated in flocks, under the parental care, even in some cases until they are fully grown; but this has generally been in those parts where they have remained unmolested in the enjoyment of social intercourse. At such a time they may be followed very successfully; but when disturbed repeatedly by a human creature, the flock becomes separated, and they never again unite. In shooting these birds I have always employed an ordinary size double gun, and never larger than No. 5, but generally No. 6 shot. For a more particular account of the Ruffed Grouse, the reader is referred to page 13, Vol. I. of the "Cabinet of Natural History."

The *Pinnated Grouse*, however, has usually ranked first in the list of our feathered game, and whenever you hear Sportsmen talk of Grouse shooting, they always allude to this bird.

Most Sportsmen know only of the existence of this one species as a Grouse,—as the former bird is usually called the Pheasant, (by some the Partridge,) and the four latter, by their remoteness, seem only to be known to naturalists, and a few travellers. Therefore, when the Sportsman or public are speaking of Grouse, they mean the Pinnated Grouse.

This bird exists no where but on plains and barren mountains, protected only by high grass and small shrubbery, and is seldom seen in the neighbourhood of water. Its thirst is satisfied by dew-drops and rain; and in consequence of this habit, it is rendered an object of laborious pursuit both to Sportsmen and dogs, as the excessive fatigue in hunting creates violent thirst, and no water being at hand to relieve them, the dogs often are obliged to give over, frequently before half of the day is expended. To remedy this, Sportsmen are obliged to carry water for themselves and dogs to some spot convenient on the ground they intend to range.

The Pinnated Grouse is found in New-Jersey, within twenty-five miles of Philadelphia, but not in numbers. They have been persecuted and killed, and almost exterminated, by Sportsmen from Philadelphia, the towns of New Jersey, and the immediate neighbourhood of the plains, who destroy them so early in the season, that they become easy and sure victims to the rapacity of these unfeeling men.

In consequence of the labour and expense attending Grouse shooting, and the uncertainty of success, most Sportsmen shrink from the pursuit, and it is confined, in the Atlantic states, to but comparatively a few individuals, and these are inhabitants of New-York, New-Jersey, and Pennsylvania; and the parts now resorted to by them, are the Plains of Long Island, and those of Gloucester, Burlington, and Monmouth counties of New-Jersey, and the Pocono and Broad Mountains, of Pennsylvania, and the whole range of high lands east of them to the river Delaware. It is ascertained that these birds are found in small numbers also on Martha's Vineyard.

The prairies of the west, however, are the chief abode of this interesting bird, where they exist in multitudes, and often become nuisances to residents in those parts, in consequence of the numbers which visit farms and other settlements, in particular seasons of the year, and are frequently destroyed, not for any value attached to the bird, but to prevent the injury which might otherwise accrue from their great numbers.

To hunt Grouse properly, you should always be supplied with a reserve of dogs, not having less than four, and from that number to eight, according to the strength of your company. This number should be divided so as to hunt them on alternate days. For this hunting, the Pointer is superior to the Setter, as he can sustain heat and thirst much better.

In the whole range of our sports there is none so fatiguing, or that tests the energies of the hunter and his dogs so much as Grouse shooting, for it occurs during that season when the sun is yet in its full power, (September and beginning of

October,)—the country over which you roam is either barren mountains or endless plains,—no shelter from the sun, nor supplies of water to slake the thirst,—and a continued growth of scrub bushes to pass through, injurious to the dogs, and exceedingly difficult for the Sportsmen to overcome. Besides, you often wander a day or more without seeing a bird; and, after exhausting all this time, your strength, and patience, you are obliged to return many miles, on foot, to some habitation for the night. It requires, also, that you should hunt with great caution and quietness; the human voice should never be heard, especially if your dogs have struck a trail, and are in the vicinity of the game. You must then be on the alert,—and when your dogs draw to a steady point, your chief object must be to kill the first bird that rises—for a pack of Grouse may be at hand, and by silence, and killing the first bird, you stand a fair chance of getting the remainder.

The bird which usually rises first, is the leader of the whole, and is the parent cock bird,—and if he is not killed before he *challenges* or alarms the others, you may lose several fine chances, because the remainder, on hearing the cry of alarm from their leader, will immediately take wing, and escape. But if, on the contrary, the alarm is prevented, the others will remain in their seclusion, until you can at leisure drive them up one by one, and get the whole. The report of your gun will not alarm them,—but a single word spoken, will spoil your sport. It is to be understood, however, that your dogs must be of the first order—perfectly staunch—and which will not break away on your fire; at this time the birds may be scattered about, either wallowing in the earth, or in search of food, and forms one of the most propitious periods for the Sportsman.

Should you be successful in the early part of the day, or on your outward range, by bagging several birds, it will be advisable to disencumber yourself from your burthen—provided you calculate to return nearly the same route. In doing this, you must first select a cool spot, under the shadow of some rocks, or the most dense shrubbery you can find, and after scraping away the surface of the earth, there deposit your game. You must cover it with moss, if you can get it, or green leaves, and on this, or around it, place two or three pieces of tow, with burnt powder on it, which you can procure by wiping your gun. The object of this is to preserve the game from vermin, particularly foxes, which it will effectually do. One important point to observe, is, that you should tie the neck of each bird so completely tight as to admit no air; and plug the vent with charcoal, prepared for the purpose by being cut into a form somewhat like a sugar-loaf, only tapering to a sharp point. This will preserve the birds a much longer time than if omitted; and no Sportsman should think these preparations too troublesome, on an expedition of that kind. The difficulty of killing the birds, and the labour and expense attending these excursions, make it desirable that all means should be resorted to, to bring your game home in a good state of preservation.

The Pinnated Grouse describes a straight, but very long line of flight. You must, therefore, mark their course, as correct as you can, and after you have adjusted matters, follow immediately in their wake. You thereby not only stand a fair chance of coming on the same birds again, but of finding others in your route.

In respect to the size of shot to be employed, many Grouse hunters use larger sizes than are necessary, say B, 1, 2, 3. But in this, as in other cases, I have a great aversion to large shot. Grouse are generally hunted before they are matured, or fully fledged, and much smaller shot is capable of destroying them, than either of the above sizes. I would recommend you never to use larger than No. 3, but of choice No. 4 or 5.

If your gun is of 11-16ths calibre, and proportionably heavy, she will be found suitable for the purpose; but you, of course, must use more powder and shot at Grouse than you would at smaller game.

I have often wondered why Sportsmen should so seldom hunt the Ruffed Grouse. In size, it nearly equals the Pinnated Grouse, and, in the fall, I think is quite as good eating. And what appears more strange, is, that gentlemen will incur great expense,—travel fifty or a hundred miles, with a train of dogs,—spend one or two weeks in pursuit, and generally return with no more than four or five brace of the latter. Whereas half the time and expense will answer, with two good dogs, to insure thrice the success with the former, from grounds more adjacent.

The *Spotted Grouse* is less known than either of the foregoing species, as they are not to be found in any of the middle, southern, or western states; they inhabit the north part of Maine, the Canadas, and the regions of the Rocky Mountains. To the north they are called the Spruce Partridge and Canada Grouse; but larger and more valuable game exists in such abundance there, that the Spotted Grouse is thought unworthy of the hunter's notice. The portrait and history of this bird will be given in No. 4, Vol. III. page 85, of this work.

The other three species are found only in the far west, particularly the *Cock of the Plains*, which inhabits that country beyond the Rocky Mountains, particularly the low lands along the Columbia river, and in size is as large as the female Turkey. These of course cannot be objects of pursuit, by the Sportsmen of this or the next generation.

I.

Wm. Childs & Inman's Press.

GOLDEN WINGED WARBLER.

INDIGO BIRD.

GOLDEN-WINGED WARBLER.

SYLVIA CHRYSOPTERA.

[Plate III. Vol. 3.]

Edw. 299.—*Le figuier aux ailes dorees*, Buff. v. 311.—Lath. ii. 492.—*Arct. Zool.* 403, *No.* 295. *Ib. No.* 296.—*Motacilla chrysoptera*, Turt. *Syst.* i. 597.—*Motacilla flavifrons, Yellow-fronted Warbler, Id.* 601.—*Parus alis aureis*, Bartram, *p.* 292.—*Motacilla chrysoptera*, Linn. Syst. i. p. 333.—Gmel. Syst. i. p. 971.—*Motacilla flavifrons*, Gmel. Syst. i. p. 976.—*Sylvia chrysoptera*, Lath. *Ind. Orn.* ii. p. 541.—Vieill. *Ois. de l'Am. Sept. pl.* 97. *Sylvia flavifrons*, Lath. *Ind. Orn.* ii. p. 527.—Collection of L. J. Salaignac, Esq.

[On a branch of Dog-wood.]

This is another spring passenger through the United States to the north. This bird, from the particular form of its bill, ought rather to be separated from the Warblers, or, along with several others of the same kind, might be arranged as a sub genus, or particular family of that tribe, which might with propriety be called *Wormeaters*, the *Motacilla vermivora* of Turton, having the bill exactly of this form. The habits of these birds partake a good deal of those of the Titmouse, and in their language and action they very much resemble them. All that can be said of this species is, that it appears in Pennsylvania for a few days, about the last of April or beginning of May, darting actively among the young leaves and opening buds, and is rather a scarce species.

The Golden-winged Warbler is five inches long, and seven broad; the crown golden yellow; the first and second row of wing coverts of the same rich yellow; the rest of the upper parts a deep ash, or dark slate colour; tail slightly rounded, and, as well as the wings, edged with whitish; a black band passes through the eye, and is separated from the yellow of the crown by a fine line of white; chin and throat black, between which, and that passing through the eye runs a strip of white, as in the figure; belly and vent white; upper mandibill black, gradually tapering to a sharp point; legs dark ash; irides hazel.

Pennant has described this species twice, first as the Golden-winged Warbler, and immediately after as the Yellow-fronted Warbler. See the synonymes at the beginning of this article.—Wilson.

INDIGO BIRD.

FRINGILLA CYANEA.

[Plate III. Vol. 3.]

Tanagra cyanea, Linn. *Syst.* i. 315.—*Le Ministre*, Buffon, iv. 96.—*Indigo Bunting, Arct. Zool.* ii. *No.* 235.—Lath. *Syn.* iii. 205, 63.—*Blue Linnet*, Edw. 273.—*Linaria cyanea*, Bartram, p. 290.—Collection of L. J. Salaignac, Esq.

[On a branch of Dog-wood.]

This is another of those rich-plumaged tribes, that visit us in spring from the regions of the south. It arrives in Pennsylvania on the second week in May, and disappears about the middle of September. It is numerous in all the settled parts of the middle and eastern states; in the Carolinas and Georgia it is also abundant. Though Catesby says that it is only found at a great distance from the sea; yet round the city of New-York, and in many places along the shores of New-Jersey, I have met with them in plenty. I may also add, on the authority of Mr. William Bartram, that "they inhabit the continent and sea-coast islands, from Mexico to Nova-Scotia, from the sea-coast west beyond the Apalachian and Cherokee mountains." They are also known in Mexico, where they probably winter. Its favourite haunts, while with us, are about gardens, fields of deep clover, the borders of woods, and road sides, where it is frequently seen perched on the fences. In its manners it is extremely active and neat; and a vigorous and pretty good songster. It mounts to the highest tops of a large tree, and chants for half an hour at a time. Its song is not one continued strain, but a repetition of short notes, commencing loud and rapid, and falling by almost imperceptible gradations for six or eight seconds, till they seem hardly articulate, as if the little minstrel were quite exhausted; and after a pause of half a minute or less commences again as before. Some of our birds sing only in spring, and then chiefly in the morning, being comparatively mute during the heat of noon; but the Indigo bird chants with as much animation under the meridian sun, in the month of July, as in the month of May; and continues his song, occasionally, to the middle or end of August. His usual note, when alarmed by an approach to his nest, is a sharp *chip*, like that of striking two hard pebbles smartly together.

Notwithstanding the beauty of his plumage, the vivacity with which he sings, and the ease with which he can be

reared and kept, the Indigo bird is seldom seen domesticated. The few I have met with were taken in trap-cages; and such of any species rarely sing equal to those which have been reared by hand from the nest. There is one singularity, which as it cannot be well represented in the figure, may be mentioned here, viz. that in some certain lights his plumage appears of a rich sky-blue, and in others of a vivid verdigrise green;* so that the same bird, in passing from one place to another before your eyes, seems to undergo a total change of colour. When the angle of incidence of the rays of light, reflected from his plumage, is acute, the colour is green, when obtuse, blue. Such I think I have observed to be uniformly the case, without being optician enough to explain why it is so. From this, however, must be excepted the colour of the head, which being of a very deep blue, is not affected by a change of position.

The nest of this bird is usually built in a low bush among rank grass, grain or clover; suspended by two twigs, one passing up each side; and is composed outwardly of flax, and lined with fine dry grass. I have also known it to build in the hollow of an apple tree. The eggs, generally five, are blue, with a blotch of purple at the great end.

The Indigo bird is five inches long, and seven inches in extent; the whole body is of a rich sky blue, deepening on the head to an ultramarine, with a tinge of purple; the blue on the body, tail, and wings, varies in particular lights to a light green, or verdigrise colour, similar to that on the breast of a peacock; wings black, edged with light blue, and becoming brownish towards the tips; lesser coverts light blue; greater black, broadly skirted with the same blue; tail black, exteriorly edged with blue; bill black above, whitish below, somewhat larger than Finches of the same size usually are, but less than those of the genus *Emberiza*, with which Pennant has classed it, though I think improperly, as the bird has much more of the form and manners of the genus *Fringilla*, where I must be permitted to place it; legs and feet blackish brown. The female is of a light flaxen colour, with the wings dusky black, and the cheeks, breast, and whole lower parts a clay colour, with streaks of a darker colour under the wings, and tinged in several places with bluish. Towards fall the male while moulting becomes nearly of the colour of the female, and in one which I kept through the winter, the rich plumage did not return for more than two months; though I doubt not had the bird enjoyed his liberty and natural food under a warm sun, this brownness would have been of shorter duration. The usual food of this species is insects and various kinds of seeds.—*Ib.*

* See figure in Plate III. Vol. 3.

DOG-WOOD.

CORNUS FLORIDA.

A Branch, with Leaves and Flowers of the natural size. *Plate* III. Vol. 3.

Among the eight species of Dog-wood, which have been observed in North America, this alone is entitled, by its size, to be classed with the forest trees. It is the most interesting, too, for the value of its wood, the properties of its bark, and the beauty of its flowers. In the United States at large, it is known by the name of *Dog-wood*, and in Connecticut it is also called *Box-wood*.

The Dog-wood is first seen in Massachusetts, between the 42° and 43° of latitude, and in proceeding southward, it is met with uninterruptedly throughout the eastern and western states and the two Floridas, to the banks of the Mississippi. Over this vast extent of country, it is one of the most common trees, and it abounds particularly in New-Jersey, Pennsylvania, Maryland, and Virginia, wherever the soil is moist, gravelly, and uneven; farther south, in the Carolinas, Georgia, and the Floridas, it is found only in the borders of swamps, and never in pine barrens, where the soil is too dry and sandy to sustain its vegetation. In the most fertile regions of Kentucky, and West Tennessee, it does not appear in the forest, except where the soil is gravelly, and of middling quality.

The Dog-wood sometimes reaches thirty or thirty-five feet in height, and nine or ten inches in diameter; but it does not generally exceed the height of eighteen or twenty feet, and the diameter of four or five inches. The trunk is strong, and is covered with a blackish bark, chapped into many small portions, which are often in the shape of squares, more or less exact. The branches are proportionably less numerous than on other trees, and are regularly disposed nearly in the form of crosses. The young twigs are observed to incline upwards in a semi-circular direction.

The leaves are opposite, about three inches in length, oval, of a dark green above, and whitish beneath; the upper surface is very distinctly sulcated. Towards the close of summer, they are often marked with black spots, and at the approach of winter they change to a dull red.

In New-York and New-Jersey, the flowers are fully blown about the 10th or 18th of May, while the leaves are only beginning to unfold themselves. The flowers are small, yellowish, and collected in bunches, which are surrounded with a very large involuere, composed of four white floral leaves, sometimes inclining to violet. This fine involuere constitutes all the beauty of the flowers, which are very numerous, and which, in their season,

robe the tree in white, like a full blown apple tree, and render it one of the fairest ornaments of the American forest.

The seeds, of a vivid, glossy red, and of an oval shape, are always united; they remain upon the trees till the first frosts, when, notwithstanding their bitterness, they are devoured by the Robin, (*Turdus Migratorius*,) which about this period arrives from the northern regions.

The wood is hard, compact, heavy, and fine grained; and is susceptible of a brilliant polish. The sap is perfectly white, and the heart is of chocolate colour. This tree is not large enough for works which require pieces of considerable volume; it is used for the handles of light tools, such as mallets, small vices, &c. In the country, some farmers select it for harrow teeth, for the frames of horses' collars, and also for lining the runners of sledges; but to whatever purpose it is applied, being liable to split, it should never be wrought till it is perfectly seasoned. The shoots, when three or four years old, are found proper for the light hoops of small, portable casks; but the consumption in this way is inconsiderable. In the middle states the cogs of mill wheels are made of Dog-wood, and its divergent branches are taken for the yokes which are put upon the necks of swine, to prevent their breaking into cultivated enclosures. Such are the profitable uses of this tree; it affords also excellent fuel, but it is too small to be brought into the markets of the cities.

The liber, or interior bark of the Dog-wood, is extremely bitter, and proves an excellent remedy in intermitting fevers. It has been known and successfully used by the country people, as a specific in these maladies, for more than fifty years. Its medicinal properties were made the subject of a thesis sustained in the College of Physic at Philadelphia, in 1803; in which was presented an analysis of the bark of the Dog-wood, and the blue berried Dog-wood, compared with the Peruvian bark. By the experiment made on the occasion, the Dog-wood bark was shown to have a close analogy to the Peruvian bark, and to be capable, in many cases, of supplying its place with success. The author of this excellent piece cites a Physician of Pennsylvania, who, during twenty years, had constantly employed it, and who estimated 35 grains of it to be equivalent to 30 grains of the Peruvian bark. The only inconvenience accompanying its use was, that if taken within a year after being stript from the tree, it sometimes occasioned acute pains of the bowels; but this evil was remedied by adding to it five grains of Virginia snake root, (*aristolochia serpentaria.*)

The same author gives a receipt for making an excellent ink, in which this bark is substituted for gall nuts:—Put half an ounce of Dog-wood bark—2 scruples of sulphate of iron—and 2 scruples of gum arabic, into 16 ounces of rain water; during the infusion shake it repeatedly.

The Dog-wood merits the attention of Europeans, for the value of its wood, and especially for the brilliancy of its flowers,—by which it is better adapted than almost any other North American tree, to the embellishment of forests, parks, and extensive gardens.—*Michaux.*

THE BEAVER—(*Concluded from page* 9.)

AUTHENTIC HISTORY—*Continued.*

"The beaver is an animal which cannot keep under water long at a time; so that when their houses are broke open, and all their places of retreat discovered, they have but one choice left, as it may be called, either to be taken in their houses or their vaults: in general they prefer the latter; for where there is one beaver caught in the house, many thousands are taken in their vaults in the banks. Sometimes they are caught in nets, and in the summer very frequently in traps. In winter they are very fat and delicious; but the trouble of rearing their young, the thinness of their hair, and their constantly roving from place to place, with the trouble they have in providing against the approach of winter, generally keep them very poor during the summer season, at which time their flesh

FICTITIOUS HISTORY—*Continued.*

"Each tribe has its peculiar territory. If any foreigner be taken in the act of marauding, he is delivered over to the chief, who, on the first offence, chastises him with a view to correction; but, for the second, deprives him of his tail, which is considered as the greatest disgrace to which a Beaver can be exposed; for the tail is the carriage on which he conveys stones, mortar, provisions, &c. and it is also the trowel (the figure of which it represents exactly) which he uses in building. This violation of international rights, however, is considered among them as so great an outrage, that the whole tribe of the mutilated culprit take up arms in his cause, and proceed immediately to obtain vengeance.

"In this conflict, the victors, availing themselves of the

AUTHENTIC HISTORY.—*Continued.*

is but indifferent eating, and their skins of so little value, that the Indians generally singe them, even to the amount of many thousands in one summer. They have from two to five young, at a time. Mr. Dobbs, in his account of Hudson's Bay, enumerates no less than eight different kinds of beaver; but it must be understood that they are all of one kind and species; his distinctions arise wholly from the different seasons of the year in which they are killed, and the different uses to which their skins are applied, which is the sole reason that they vary so much in value.

"Joseph Lefranc, or Mr. Dobbs for him, says, that a good hunter can kill six hundred beaver in one season, and can only carry one hundred to market. If that was really the case in Lefranc's time, the canoes must have been much smaller than they are at present; for it is well known that the generality of the canoes which have visited the Company's Factories for the last forty or fifty years, are capable of carrying three hundred beaver-skins with great ease, exclusive of the Indian's luggage, provisions, &c.

"If ever a particular Indian killed six hundred beaver in one winter, (which is rather to be doubted,) it is more than probable that many in his company did not kill twenty, and perhaps some none at all; so that by distributing them among those who had bad success, and others who had no abilities for that kind of hunting, there would be no necessity of leaving them to rot, or for singing them in the fire, as related by that author. During my residence among the Indians I have known some individuals kill more beaver, and other heavy furs, in the course of a winter, than their wives could manage; but the overplus was never wantonly destroyed, but always given to their relations, or to those who had been less successful; so that the whole of the great hunter's labours were always brought to the factory. It is indeed too frequently a custom among the southern Indians to singe many otters, as well as beaver; but this is seldom done, except in summer, when their skins are of so little value as to be scarcely worth the duty; on which account it has been always thought impolitic to encourage the natives to kill such valuable animals at a time when their skins are not in season.

"The white beaver, mentioned by Lefranc, are so rare, that instead of being 'blown upon by the Company's Factors,' as he asserts, I rather doubt whether one-tenth of them ever saw one during the time of their residence in this country. In the course of twenty years experience in the countries about Hudson's Bay, though I travelled six hundred miles to the west of the sea-coast,

FICTITIOUS HISTORY—*Continued.*

customary rights of war, expel the conquered from their home, take possession of it themselves, appoint a provisional garrison for the occupation, and eventually establish in it a colony of young Beavers. In this connexion, another circumstance relating to these truly wonderful creatures will appear not less astonishing.

"The female Beaver whelps usually in the month of April, and produces as many as four young ones. She sustains, and carefully instructs them for a year, that is, till the family are on the eve of a new increase; and then these young Beavers, compelled thus to make room for others, build a new home by the side of the paternal mansion, if they be not very numerous; but if there should be too many to admit of this, they are obliged to go, with others, to a new spot, forming a new tribe and a new establishment. If, then, about this season the enemy should happen to be driven from his quarters, the conquerors install in them their own young ones of the current year, provided they be duly qualified for emancipation; or, in other words, capable of managing for themselves.

"The Indians have related to me as a positive fact, another circumstance respecting the conduct of these animals; but it is so extraordinary, that I leave you to credit it or not, as you may think proper.

"They allege, and some will even assert themselves to have been eye-witnesses of such a fact, that the two chiefs of hostile tribes sometimes terminate the quarrel by a single combat, in presence of the two opposing armies, instances of which have occurred in various nations; or by a conflict of three with three, like the Horatii and Curatii of antiquity.

"Beavers practise the usage of matrimony, and death alone separates the parties. They inflict heavy punishments on their females for infidelity, and sometimes even death itself.

"In cases of sickness, they mutually and anxiously take care of each other; and the sick express their pain by plaintive sounds and tones like the human race.

"The Indians hunt the Beaver in the same way in which I formerly described them to you as hunting the musk-rat: indeed the latter animal may be considered as a Beaver of a secondary order. It is of the same shape, only smaller, and resembles it in many of its qualities, but its fur is very inferior in beauty and fineness. It may be added, that in winter the Indians make holes in the ice which covers the ponds surrounding the habitation of the Beavers, and, carefully watching for the moment when they lift up their heads to take breath, instantly shoot them.

AUTHENTIC HISTORY—*Continued.*

I never saw but one white beaver-skin, and it had many reddish and brown hairs along the ridge of the back, and the sides and belly were of a glossy silvery white. It was deemed by the Indians a great curiosity; and I offered three times the usual price for a few of them, if they could be got; but in the course of ten years that I remained there afterward, I could not procure another; which is a convincing proof there is no such thing as a breed of that kind, and that a variation from the usual colour is very rare.

"Black Beaver, and that of a beautiful gloss, are not uncommon: perhaps they are more plentiful at Churchill than at any other Factory in the Bay; but it is rare to get more than twelve or fifteen of their skins in the course of one year's trade.

"Lefranc, as an Indian, must have known better than to have informed Mr. Dobbs that the Beaver have from ten to fifteen young at a time; or if he did, he must have deceived him wilfully: for the Indians, by killing them in all stages of gestation, have abundant opportunities of ascertaining the usual number of their offspring. I have seen some hundreds of them killed at the seasons favourable for those observations, and never could discover more than six young in one female, and that only in two instances; for the usual number, as I have before observed, is from two to five.

"Besides this unerring method of ascertaining the real number of young which any animal has at a time, there is another rule to go by, with respect to the Beaver, which experience has proved to the Indians never to vary or deceive them, that is by dissection; for on examining the womb of a beaver, even at a time when not with young, there is always found a hardish round knob for every young she had at the last litter. This is a circumstance I have been particularly careful to examine, and can affirm it to be true, from real experience.

"Most of the accounts, nay, I may say all the accounts now extant, respecting the Beaver, are taken from the authority of the French who have resided in Canada; but those accounts differ so much from the real state and œconomy of all the Beaver to the north of that place, as to leave great room to suspect the truth of them altogether. In the first place, the assertion that they have two doors to their houses, one on the land side, and the other next the water, is, as I have before observed, quite contrary to fact and common sense, as it would render their houses of no use to them, either as places of shelter from the inclemency of the extreme cold in winter, or as a retreat from their common enemy the quiquehatch. The only thing

FICTITIOUS HISTORY—*Continued.*

"*Great Hare*, at Bloody Lake, confidently assured me that, on reaching the spot where two tribes of Beavers had just been engaged in battle with each other, he had found upon the field fifteen, dead or dying; and other Indians, both Sioux and Cypowais, have equally declared that they have occasionally obtained capital prizes on the like occasions. It is perfectly correct that they are sometimes taken without a tail. I have seen one in that state myself, which corroborates the history of the punishment inflicted by them on obstinate offenders. In short, these animals are deemed so very extraordinary, even by Indians, that they consider them as men metamorphosed into Beavers; and killing them is regarded as conferring upon them a very essential service, as it is conceived to be a restoration of them to their original state of being. Here, again, my dear Countess, is a puzzle for those who are desirous of compacting the religion of these tribes into a system!"—*Beltrami.**

"It oftentimes happens that a single Beaver lives retired, and it is then styled by furriers, a *hermit;* they say it is turned out from the family because it is lazy and will not work. All hermit Beavers have a black mark on the inside of the skin upon their backs, called a saddle, which distinguishes them. Fidelity is supposed to cause hermit Beavers, as they are very faithful creatures to their mate; and by some accident or other losing that mate, they either will not pair again, or remain single until they can find another hermit of the contrary sex; and that the saddle proceeds from the want of a partner to keep their back warm!"—*A Story of the Hunters.*

(*Concluded.*)

* This author, who styles himself "J. C. Beltrami, Esq. formerly Judge of a Royal Court in the Ex-kingdom of Italy," is what may truly be called a "romancing traveller," who, after making a tour through several kingdoms of Europe, came to America, and, as *he says*, discovered the sources of the Mississippi!!!

This looks very much like the affair of those Dutch navigators, who, some time since, were exulting because they had discovered some new islands in the Pacific,—and, after having christened them—went home rejoicing to their master, the king, with the glad tidings. It however turned out afterwards, that these islands had been known and visited, many years before, by some Yankee whale ships.

But Beltrami wrote his work entirely for the ladies of Italy, to whom he dedicated it, through a favourite Italian Countess, and therefore had to make out some marvellous tales. But the best of the joke is, that this author was not only most inquisitive, but credulous of every thing related to him; and his notice of the Beaver, which is inserted above, was told with great gravity to the above author, by an officer of the United States army, and some Indian hunters, merely to see how much he could swallow! This took place in the camp at Council Bluffs, under Major Long's expedition, which place Beltrami often visited, while he travel-

that could have made M. Du Pratz, and other French writers, conjecture that such a thing did exist, must have been from having seen some old beaver-houses which had been taken by the Indians; for they are always obliged to make a hole in one side of the house before they can drive them out; and it is more than probable that in so mild a climate as Canada, the Indians generally make those holes on the land side, which without doubt gave rise to the suggestion. The Northern Indians think that the sagacity of the Beaver directs them to make that part of their house which fronts the north much thicker than any other part, with a view of defending themselves from the cold winds which generally blow from that quarter during the winter; and for this reason the northern Indians generally break open that side of the Beaver-houses which exactly front the south.

"In respect to the Beaver dunging in their houses, as some persons assert, it is quite wrong, as they always plunge into the water to do it. I am the better enabled to make this assertion, from having kept several of them till they became so domesticated as to answer to their name, and follow those to whom they were accustomed, in the same manner as a dog would do, and they were as much pleased at being fondled, as any animal I ever saw. I had a house built for them, and a small piece of water before the door, into which they always plunged when they wanted to ease nature; and their dung being of a light substance, immediately rises and floats on the surface, then separates and subsides to the bottom. When the winter sets in so as to freeze the water solid, they still continue their custom of coming out of their house, and dunging and making water on the ice; and when the weather was so cold that I was obliged to take them into my house, they always went into a large tub of water which I set for that purpose: so that they made not the least dirt, though they were kept in my own sitting-room, where they were the constant companions of the Indian women and children, and were so fond of their company, that when the Indians were absent for any considerable time, the Beaver discovered great signs of uneasiness, and on their return showed equal marks of pleasure, by fondling on them, crawling into their laps, laying on their backs, sitting erect like a squirrel, and behaving to them like children, who see their parents but seldom. In general, during the winter they lived on the same food as the women did, and were remarkably fond of rice and plum-pudding: they would eat partridges and fresh venison very freely, but I never tried them with fish, though I have heard they will at times prey on them. In fact, there are few of the granivorous animals that may not be brought to be carniverous. It is well known that our domestic poultry will eat animal food: thousands of geese that come to London market are fattened on tallow-craps; and our horses in Hudson's Bay would not only eat all kinds of animal food, but also drink freely of the wash, or pot-liquor, intended for the hogs.

"With respect to the inferior, or slave-beaver, of which some authors speak, it is, in my opinion, very difficult for those who are best acquainted with the œconomy of this animal to determine whether there are any that deserve that appellation or not. It sometimes happens, that a Beaver is caught, which has but a very indifferent coat, and which has broad patches on the back, and shoulders almost wholly without hair. This is the only foundation for asserting that there is an inferior, or slave-beaver, among them. And when one of the above description is taken, it is perhaps too hastily inferred that the hair is worn off from those parts by carrying heavy loads: whereas it is most probable that it is caused by a disorder that attacks them somewhat similar to the mange; for were that falling off of the hair occasioned by performing extra labour, it is natural to think that instances of it would be more frequent than there are; as it is rare to see one of them in the course of seven or ten years. I have seen a whole house of those animals that had nothing on the surface of their bodies but the fine soft down; all the long hairs having molted off. This and every other deviation from the general run is undoubtedly owing to some particular disorder.—*Hearne's Journey to the Northern Ocean, and through the country west of Prince of Wales Fort, Hudson Bay, A. D.* 1771.

"As all the accounts which I have hitherto read of Beavers, are very erroneous, I shall here communicate my observations on those animals. I suppose that none of the writers who have mentioned them, ever saw a Beaver-house, but related only the tales of illiterate furriers, whose veracity is not to be depended upon. I tremble at feeling myself under the necessity of contradicting that celebrated natural historian, Compt de Buffon; yet I must take the liberty to do it. He says, 'A Beaver has a scaly tail, because he eats fish;' I wonder much that Monsieur Buffon had not one himself for the same reason; for I am

led, as far as he could, under the protection afforded by the United States forces. The above facts were related to the writer by one of the most eminent men on this expedition, only last summer; and these remarks are made to show how often the world is deluged by fabulous stories on matters which should be preserved in entire purity.—[Ed.]

sure that he has eaten a great deal more fish, than all the Beavers in the world put together. Beavers will neither eat fish, nor any other animal food; but live upon the leaves and bark of such trees and shrubs as have not a resinous juice, and the root of the water-lilly. I have known them eat black spruce; and they will sometimes cut down silver-fur; but I believe that is only to build with when other trees are scarce. When they eat, they hold their food in their fore-paws, and sit up like monkeys. In the summer time they ramble about very much, paying little regard to their houses, and will make a bed of sticks shred fine, under a bush near the water-side, and there sleep: the first bed of this kind which I found, I took to be the nest of a goose. If the pond which they lived in the last winter, has plenty of such food as they like, growing by the side of it, and they have not been disturbed by man, they will seldom quit it; but if there be a scarcity of food, they will wander about in search of another, where they can be more plentifully supplied: and it has been long observed, that of all the trees which grow in Newfoundland or Labrador, they like the aspen best, and next to that the birch. Having found a place convenient for the purpose, they commonly begin early in August to erect their house. The sticks which they make use of on this occasion, are of all sizes, from the thickness of a man's ancle to his little finger, but very seldom of larger dimensions. They pile up these materials in the form of a dome, sometimes to the height of six or seven feet above the level of the ground, but commonly not more than four. The base is generally of an oval form; the height ten or twelve feet, and eight or nine in width. As they raise this pile above, they hollow it out below, taking care that their bed, or lodging-place, shall be above the reach of floods, and sufficiently roomy to contain the whole family. From the fore part of the house, they build a projection into the pond, sloping downwards all the way, and under this they enter into their house. This entrance is called by the furriers, *the angle*; nor do they always content themselves with one, but more commonly will have two, and sometimes three. They have but one apartment, which is termed the lodging, and which is shaped in the inside like an oven, the bottom of which is covered with the shreds of sticks, resembling fine narrow shavings. At a little distance from the angle, is their magazine of provisions, which consists of the roots of water-lilly, and the branches of trees; the but-ends of the latter they stick into the mud where there is any. The whole is termed *writh*, and I have seen as much as a cart would hold; great part appearing above water. They are very industrious creatures, for even amidst a superabundance of provisions, they will continue to add to the store; and though their house be completely built, they will still carry on fresh works, until the pond is frozen firm over; they will even keep a hole open to work on the house for some nights after; provided the frost is not very severe; and as they will enter every old house and do a little work upon it, young furriers are frequently deceived thereby, supposing those houses to be inhabited. Although they will sometimes continue in the same pond for three or four years or more, yet they will frequently build themselves a new house every year; at other times they will repair an old one, and live in that, and they often build a new house upon or close adjoining to an old one, making the two tops into one, and cut a communication between the lodgings: hence, I presume, arose the idea of their having several apartments. When the pond is not deep enough for them, they will throw a dam across the mouth of the brook by which it discharges its water, to raise it to a sufficient height; making use of sticks, stones, mud, and sand, for this purpose. Some of these I have seen of great length and strength, insomuch that I have walked over them with the greatest safety, though not quite dry-shod, if they be new, as the water always sheds over them, being on an exact level from end to end. But if, notwithstanding the stint, they cannot raise the water to a proper depth, near the bank, they build their house in the pond, at a few yards distance from the shore, beginning at the bottom and hollowing it out as they go on, for they must have about three feet depth over the end of the angle, or the water would freeze in it, and they could go neither in nor out. If there be an island in the pond, they generally make their house on that, being the safest place, and by far the greatest number of houses are on the north shore, for the advantage of the sun. They have no opening from their house, on the land side, and for these reasons; because the frosty air would enter at that hole, and freeze up the water in the angle, whereby they would be cut off from their magazine; the wolves likewise, and other enemies, might enter thereat, and kill them; and the cold would be greater than they could bear.

"Beavers generally bring forth two young ones at a time, which are most commonly male and female; yet they will often have but one, especially the first time of breeding; and sometimes three or four. The first year, they are called *pappooses*—the second, *small medlers*—the third, *large medlers*—the fourth, *Beaver*—and, after that, *old* or *great Beaver*. They copulate in May, and bring forth towards the end of June. The young ones

continue to live with their parents until they are full three years old; then pair off, build a house for themselves, and begin to breed. Yet sometimes, and not uncommonly, if they are undisturbed and have plenty of provisions, they will continue longer with the old ones, and breed in the same house.

"Whether they do or do not make use of their tails as trowels to plaster their houses with, I cannot say, though I am inclined to believe they do not; because their tail is so heavy, and the tendons of it so weak, though numerous, that I do not think they can use it to that effect; and that therefore they daub the earth on with their hands, for I must call them so. When they dive, they give a smack on the water with their tails as they go down; but that appears to me to proceed from the tail falling over with its own weight. They move very slowly on land, and being also a very cowardly creature, are easily killed there by any man or beast that chances to meet with them: yet, being defended by long fur, and a thick skin, and armed with long strong teeth, firmly set in very strong jaws, they are capable of making a stout resistance. I have heard of an old one, which cut the leg of a dog nearly off at one stroke, and I make not the least doubt of the truth of the information. Still I have been informed, that otters will enter their houses and kill them; but I believe it must only be the young ones, when the old ones are from home; for I hardly think that an old Beaver would suffer itself to be killed by an otter.

"These creatures begin to grow fat after the middle of July, are in tolerable case by the end of August, and by the end of September are at their best, provided they have good living, and are not disturbed. Those which feed upon brouze, particularly on birch, are the most delicious eating of any animal in the known world; but the flesh of those which feed upon the root of the water-lilly, although it makes them much fatter than any other food, has a strong taste, and is very unpleasant. After Christmas they begin to decline, and by May are commonly poor; in these particulars they resemble the porcupine, as they do in many other respects.

"Buffon and others say, that they make use of their tails as sleds to draw stones and earth upon: I cannot contradict their assertions, as I have never seen these animals work; but I do not believe it, because, their tails being thickest at the root and down the centre part, it would be almost impossible for them to keep a stone on it, unless held there by another. Nor have I ever observed, that they had taken any stones off the ground; but they bring them from the sides and bottoms of the water, and must make use of their hands for those purposes, as they could easier shove and roll them along, than draw them on their tails: besides, the skin of the under part of the tail would be rubbed off by the friction on the ground; which never yet has been observed to be the case with them, and is a stronger proof, that they never do make use of them for that purpose. Those who compare this account with the writings of Buffon and others, will find a great difference, but it must be remembered, that they wrote entirely from hearsay, and I, from experience chiefly.—*Cartwright's Journal of Transactions on the Coast of Labrador, A. D.* 1783.

"The Indians inhabiting the countries watered by the tributaries of the Missouri and Mississippi, take the Beavers principally by trapping, and are generally supplied with steel-traps by the traders, who do not sell, but lend or hire them, in order to keep the Indians dependant upon themselves, and also to lay claim to the furs which they may procure. The name of the trader being stamped on the trap, it is equal to a certificate of enlistment, and indicates, when an Indian carries his furs to another trading establishment, that the individual wishes to avoid the payment of his debts. The business of trapping requires great experience and caution, as the senses of the Beaver are very keen, and enable him to detect the recent presence of the hunter by the slightest traces. It is necessary that the hands should be washed clean before the trap is handled and baited, and that every precaution should be employed to elude the vigilance of the animal.

"The bait which is used to entice the Beaver is prepared from the substance called castor (*castoreum,*) obtained from the glandulous pouches of the male animal, which contain sometimes from two to three ounces. This substance is called by the hunters *bark*-stone, and is squeezed gently into an open-mouthed phial.

"The contents of five or six of these castor bags are mixed with a nutmeg, twelve or fifteen cloves, and thirty grains of cinnamon, in fine powder, and then the whole is stirred up with as much whiskey as will give it the consistency of mustard prepared for the table. This mixture must be kept closely corked up, and in four or five days the odour becomes more powerful; with care it may be preserved for months without injury. Various other strong aromatics are sometimes used to increase the pungency of the odour. Some of this preparation, smeared upon the bits of wood with which the traps are baited, will entice the Beaver from a great distance.

"The different appearances of the fur, caused by age,

AUTHENTIC HISTORY.—*Continued.*

season, disease, or accident, has at times led individuals to state the existence of several species of Beaver in this country. No other species, however, has yet been discovered, but that whose habits we have been describing. Beavers are occasionally found nearly of a pure white, which is owing to the same cause that produces albino varieties of various animals.

"The Beaver is about two feet in length, having a thick and heavy body, especially at its hinder part. The head is compressed and somewhat arched at the front, the upper part being rather narrow, and the snout at the extremity, quite so; the neck is very short and thick. The eyes are situated rather high up on the head, and have rounded pupils; the ears are short, elliptical, and almost entirely concealed by the fur. The whole skin is covered by two sorts of hair; one which is long, rather stiff, elastic, and of a gray colour for two-thirds of its length next the base, and terminated by shining, reddish, brown points, giving the general colour to the pelage; the other is short, very fine, thick, tufted and soft, being of different shades of silver gray or light lead colour. On the head and feet the hair is shorter than elsewhere. The tail, which is ten or eleven inches long, is covered with hair similar to that of the back, for about one-third of its length nearest the base, the rest of it is covered by hexagonal scales, which are not imbricated."—*Godman.*

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The Beaver appears to inhabit, at present, the northern and western regions of America, although there are evident traces that they were once dispersed over all the parts which now constitute the United States; nearly every state has its traditionary remains of the Beaver in certain locations, as Beaver dams, Beaver falls, Beaver creeks, Beaver rivers, Beaver lakes, &c. But now, the encroachment of the human species has driven them to more remote places, where they are still pursued by the persecuting hand of avarice and rapacity, until the complete extermination of this valuable creature may be expected with certainty.

The parts in which these animals may be said more to abound, are, the country about Hudson's Bay, extending from the coast of Labrador, through the interior, to the Pacific Ocean; and on all of the streams tributary to the Upper Missouri and Mississippi rivers, the north fork of the river Platte particularly, and the standing waters throughout that section of country. These are the great fields for trapping and hunting, and are resorted to by those tribes of Indians residing east of the Rocky Mountains. Immense numbers are taken and disposed of by them to the different trading establishments in various parts of the north and west. Some idea may be formed of the quantity taken, by the fact, that from the years 1793, to 1802, one million four hundred and fifty-one thousand nine hundred and eighty-four Beaver skins were shipped from the port of Quebec alone;* and in 1820 sixty thousand skins were sold by the Hudson's Bay Company. Now, if we were to add to these the number taken by those tribes of Indians extending through that vast expanse of country lying between Lake Michigan, and the Rocky Mountains, and from the 38th to the 52d parallel, embracing an extent of continent, eight hundred by twelve hundred miles, we must suppose that in less than a century, scarcely a representative of that interesting race of animals will be left. Although the Beaver is a very prolific animal, yet the manner of destroying them evidently tends to their final extermination. No regard is paid by some reckless hunters to the situation of the old female Beavers, which are often killed within a few days of their littering season, whereby not only the individual, but her whole progeny are destroyed. Multitudes of young are also killed, before they attain an age to make them of any value. How then can a race of beings exist, through any extent of time, when such an annihilating war is constantly waged against them?

Thus it will be seen, even when divested of intellectual properties, the Beaver is an exceedingly interesting animal, whether we view it during its life, or in its death. The short period of its existence, which, at most, seldom exceeds fifteen years, is a scene of industry, providence, and perseverance. Its habits as regards their own communities, is social and peaceful; it never destroys life or commits violence for its own sustenance; nor does it aggress the rights of a neighbouring animal. Its death is sought by the hunter for the value of its skin, which becomes subject to many changes and a succession of owners. In the first place the skins of the Beaver form a basis for the hunter's livelihood; then passing to the traders, become a source of profit which causes them to forego civilization and its attending benefits; from these in numbers they find their way to the cities of America and Europe, and form an article of merchandise so vast in amount as to engage the attention of large capitalists; and then again, passing

* Jenning's Cyclopædia.

from these, they are scattered over various parts of the world, until the factors make the final change, by converting them into fashionable and necessary ornaments of dress.

In appearance the Beaver much resembles the rat, particularly the musk-rat, having the same actions on land and in the water, and at a short distance would be taken for the latter; but on a closer view, the difference is at once seen, by the proportionably larger head, and the broad, flattened, and scaly tail of the Beaver.

NOTES OF A NATURALIST.

BY JACOB GREEN, M. D.

PROFESSOR OF CHEMISTRY, IN JEFFERSON COLLEGE.

The Early Settlement of our Village.

In many of the newly settled districts of the United States, their physical and literary character is undergoing continual, rapid, and important changes. A short interval of time will there often sweep away the external vestiges of things; the fields, the forests, the village, and the population, are sometimes all quickly succeeded by a new order of affairs, and with them the memory of the past is frequently lost for ever. A few years will sometimes effect more in this country, in these respects, than whole centuries often produce, in the old world.

There are many interesting facts connected with the early settlement of our village, now fresh in the recollections of some of the older inhabitants, and which would be highly interesting to those who may come after us, to collect and preserve. The rude log cabin is still in existence in our neighbourhood, from which the light of science first emanated, west of the Alleghanies, a spot where the early settler first received the benefits of knowledge, and where he was taught the elements and the blessings of religion. That spot will ever be held in honoured remembrance by the genuine lover of science and piety; and many a future antiquary will no doubt visit it, with more enthusiasm, than the lofty domes and splendid halls of science in the Eastern World. My present object is merely to notice two or three anecdotes relating to the first habitable edifice erected in this vicinity, and which was the commencement of our flourishing town. The facts I shall state were received from the venerable and virtuous companion of the first settler himself, a few hours only before her lips were sealed in eternal silence.

The first partial clearing of land made in the heart of the vast forest, which then covered all our surrounding hills and vallies, was the identical spot where our Lyceum of Natural Science now holds its sessions. But little more than fifty years since, the wigwam of the Indian may have occupied the spot where now stands this hall of science. I was informed, if it were practicable to point out the exact metes and bounds of the first enclosure of ground made in this town, it would exactly include the foundation on which our new and noble college edifice is now erected. The house first built here was formed in the usual manner, of logs—but the roof, instead of being made with boards in the way commonly practised by our first settlers, was constructed with shingles. In that early day the uses of iron were but rarely applied to buildings west of the mountains, except by the more opulent settlers, as the want of beaten roads, and the great weight of the materials, rendered it very expensive to transport them from the distant Atlantic states. All the nails and iron work of this our first dwelling-house, were, however, brought in packs by horses over the mountains. The roof, I was told, was the only one constructed with nails and shingles in all this neighbourhood for a considerable time.

When our first college hall was erected, the old house which was the commencement of the town, was removed from its first site about fifty yards, to the place where it now stands. It has undergone but little change since it was first erected, and long may it be preserved as a monument of the enterprise and industry of the founder of our village.

The second dwelling was, except the roof, of the same rude architecture, as the one we have just described. It stood some distance down the hill, just at the north-east corner of the main street and the turnpike road. It was built for the person who managed the mill, which is on the creek at the foot of the town. The old mill has been long removed; but the one now in operation is exactly on the same site the original one occupied. All the hill side between the first and second dwelling house was, till within a few years, covered with a multitude of flowering native shrubs and trees. The briar and hazle here spread their branches in wild luxuriance—and many persons now alive among us can recollect when the tall trees of the forest, with vines clustering round their branches, shaded the path from one house to the other.

The romantic hills and vallies of our neighbourhood appear to have been in former times the scene of frequent savage contention; for numberless arrow-heads and other implements of Indian warfare are now found in several

places. In some spots the council-fire seems to have been suddenly extinguished, and the yell and the war-whoop to have immediately succeeded. Near the summit of one of our hills there is a number of Indian graves, in which the bodies seem to have been interred singly, and in the modern style of sepulture.

These few anecdotes will be sufficient to demonstrate the wonderful changes which often occur in some parts of our country, even when uninfluenced by peculiar local advantages, or by the all-pervading stimulus of commercial speculation. The same individual might have here seen the same spot of earth, at one time a wild forest, the haunt of the Indian and the resort of beasts of prey, and at another the site of a flourishing town, and a distinguished abode of science and the liberal arts. Along the same path where he once pursued the deer, the bear, and the panther, he might now on either side behold the commodious dwellings of a refined society, and spacious temples devoted to a pure religion. He might have seen the wily Indian paddling his rude canoe gently over the surface of our creek, to surprise his game in the tangled brake, where now he hears the ceaseless splashing of the mill wheel, or beholds the highly cultivated field rich with the golden harvest. In a word, "he might here have seen all the intermediate stages through which a people pass, from the most simple to the highest degrees of civilization." How important, then, is it if we wish to preserve accurate anecdotes of our early history, to seize upon all existing facts, and all present authentic reminiscences, before every vestige of the past is hurried to hopeless *oblivion*.

On some of the Reptiles of our neighbourhood.

No department of the animal kingdom has furnished so much amusement to my leisure hours, as the class called *Reptilia;* and in the vast assemblage of animals grouped by naturalists under this name, those familiarly known by the name of the Tortoise, have been peculiarly interesting. Count De Cepede happily remarks, "that the tortoise has every where been the type of laziness; that it has furnished the philosophers with speculations, the poet with images, and the vulgar with proverbs." The lover of nature will frequently meet with much obloquy from the ignorant, and will sometimes be thrown into a little difficulty in consequence of his favourite pursuit. On one occasion, while searching for these animals in the neighbourhood of a remote, unfrequented town, my motions through the woods, and along the streams, were narrowly and secretly watched, and on returning to the village, while sitting at the tea-table, with one of the officers of the peace and his family, the judge was called from the parlour to make out a warrant for my apprehension, the informer testifying that I was a suspicious person,—that he had seen, in my room at the inn, a number of vials of "poticary stuff," and that I had been lurking in the fields and woods after no good. The judge could scarcely pacify him by acknowledging me as his friend, and by stating that my visit was to analyze their mineral waters, and to search for natural objects.

The American tortoises, both land and aquatic, are quite numerous, and have as yet been but very imperfectly described. The species which inhabit the streams in the immediate vicinity of our town, are probably seven in number. The Testudo Pennsylvania, and T. odorata, (*Kinosternon,*) I have not seen, though I am informed that they inhabit our ditches and muddy streams. The Testudo Punctata, or Guttata, (*Emys.*) is not very common, and rarely reaches the length of three inches. The Testudo Picta, is also small, and not often seen. Major Le Conte observes of this animal, "that it is always found in ponds, and never in streams of running water. Here they may be seen in great numbers, basking in the sun, on rocks or logs, and plunging instantaneously into the water on the approach of any one." The above remark of this accurate and experienced observer of nature, is no doubt true in general, but I have seen and captured the Punctata and the Picta, on the same spot, in one of our clear running streams of water. These two species are perhaps the most beautiful of our tortoises; their colours and markings are striking and peculiar; in young specimens, these are the most brilliant and well defined. The Testuda Serpentina, (*Chelydra,*) inhabits our creek, and reaches a very considerable size. It is the most irritable, furious, and voracious of reptiles; it snaps at every thing, and will not "let go its hold even when the head is separated from the body." It is often very destructive to our young ducks, seizing them, as Mr. Say remarks, by the feet, and dragging them under water for the purpose of devouring them; in its turn, however, it is eaten by our villagers, with great *gout,* forming, as every one knows, a most delicious and nutritive soup. The Testudo Geographica, (*Emys.*) I have not, as yet, been able to detect in our creek; but I captured a small one in the Ohio, not far from its junction with that river.* The tail was destitute

* I take this opportunity to describe a fine shell found last summer near the banks of the Ohio, some distance lower down, by Mr. W. T. R. Smith, a young limner of great promise, and which he kindly presented to me.

Helix Pomum-adami.—Shell, reddish-brown, with a metalliferous hue, lighter round the base; spire, convex; whorls, eight or nine, with regular elevated transverse lines, forming deep grooves between them; sutures, deep, aperture rather narrow; lip, not reflected; within the aperture on the outer lip, there are two parallel white teeth, the upper one is broad, flattened, and

of the yellow rings, noticed by Mr. Le Sueur, in the specimen he first discovered on the borders of Lake Eric. The Testudo Ferox, (*Trionyx*,) is quite abundant, and arrives at a very considerable size. The boys of the village frequently take it with the hook and line; being excellent food, it is not uncommon to find it in our little market, which cannot boast of many delicacies. It is said that this animal "is not found in any of the streams which empty immediately into the Atlantic ocean, to the northward of Savannah." This is very remarkable, for they are certainly very abundant in most of the tributaries of the Mississippi, in the Ohio, and in all the streams which flow into this mighty river. Why this animal should have been called the *fierce tortoise*, by way of distinction, no one can tell, for they seem less disposed to bite than any of the other species.

Testudo Clausa, or Carolina, (*Cistuda*.) I have been quite surprised and disappointed to find, that the *land tortoise*, so common throughout the United States, should in our village be a total stranger. I have never seen it in our woods myself, and upon showing one, which I brought with me from the east of the Alleghanies, to a number of the inhabitants, they declared that it was not to be found in the neighbourhood. I have but little doubt, however, that it may occasionally be seen. I have examined multitudes in other places, and will here give the result of my observations. It would be very difficult to describe all the varieties of colour, and markings, found in the different individuals of this Protean species. The predominant colours are, however, yellow and brown. In most instances the number of segments, or pieces which compose the upper shell, are thirteen central, and twenty-five marginal ones; but, in one instance, I found only eleven scutellæ on the centre; this remarkable variety is now in the cabinet of the College at Princeton. "The shell is so hard, and the animal so strong, that it can easily walk with a weight of sixty pounds on his back." When surprised, or alarmed, he withdraws his head and limbs, and closes the upper and under shells with great muscular force; he thus shuts himself in his castle, where he will often remain for hours in perfect quietude. Many individuals, either through age or corpulence, are unable to withdraw all the parts of the body, and accurately to close the upper and under shell together, and thus avail themselves of this natural defence. Some persons keep these animals in cellars to destroy troublesome insects; but I have found that after two or three years confinement, in such situations, they commonly die. I sent a box of our land tortoises, well packed in straw, across the Atlantic, to my friend, J. E. Gray, Esq. of the British Museum, where they all arrived, after a voyage of about forty days, in health and safety, and are now living, I understand, in the Zoological Gardens at London.

The land tortoise, though apparently so unworthy of attention, has been for ages the chosen favourite of the curious. Derham, and other writers of eminence, have noticed the memorable tortoise introduced into the Archiepiscopal gardens at Lambeth, in the time of Archbishop Laud, where it lived one hundred and twenty years, and at last died, not apparently from the effects of age, but owing to accidental neglect on the part of the gardener. The Rev. Mr. White, in his Natural History of Selbourne, has given a very amusing account of a domestic land tortoise, to which I shall occasionally refer in my account of the manners and private history of our own animal, which follows. The European tortoise, of Archbishop Laud, and of the Rev. Mr. White, is the T. Græca, and differs much in its habits from ours. I received a fine large specimen of the Græca, from the Prince of Musignano, now residing near Rome; and have thus had an opportunity of comparing the two animals.

About the first of May I confined, in a small enclosure near to my office window, an old tortoise, (*T. Clausa*,) which had been loitering about the garden for two or three years.* Within the enclosure there was a small box, or house, to shelter him from the sun and rain, and a little

rather bifid, the other is thin and sharp. Base of the shell near the collar mella very much depressed; umbilicus very small. Breadth, more than one-fourth of an inch.

It resembles slightly the H. gularis of Mr. Say, but cannot, I think, be confounded with that small species.

* The length of my tortoise, from the end of the nose to the extremity of the tail, is exactly eight inches. The breadth of his shell, three inches, and his weight one pound. His upper shell is of an oval form, composed of thirteen scutellæ, or middle pieces, and twenty-four marginal ones, with a small elevated oval scale in front; an elevated ridge running through the middle. The under shell is composed of twelve distinct pieces, and is divided nearly in the middle into two parts, joined together by a tough skin. These two pieces are moveable, and when the animal is surprised, these are drawn close to the upper shell. The under shell is of a very pale yellow, with dark lines, where the twelve different pieces meet each other, and the upper one has a ground of pale yellow, with dusky brown marks. The upper part of the head, which is covered with a hard scaly substance, is of the same colour with the back. The legs, which are surrounded with ovate scales, are of the colour of the under shell, though of a brighter hue. He has five stout curved claws on his fore feet, and but four, having less curvatures, on his other feet. His tail is about one-third the length of his legs, and is not covered with scales. His skin, on the sides and throat, is yellowish, sprinkled with minute bright vermilion spots; that part which surrounds the neck when extended, envelopes the head when withdrawn. His nostrils are placed above the beak; and his eyes, which seem to be scarcely moveable in their sockets, are remarkably intelligent. The iris is of a reddish hazel, and the pupil, which he cannot dilate or contract, is of a shining brown.

cave excavated in the ground for his retreat from the cold. In this last place I expected he would have passed most of his time, but in this I found myself mistaken. From the circumstance of finding my tortoise so early in the spring, I conclude that he generally comes forth from his winter retreat, or revives from his torpid state, about the latter end of April. His time of appearance must, however, be in some measure regulated by the temperature in different years. I was agreeably disappointed to find that his appetite, at this season, was very good, for I had supposed that, so shortly after his long sleep, he would have discovered but little inclination for food, and that he would reserve himself for the height of summer, when I expected to find him voracious. I kept a pretty accurate account of his diet, and I found but little variation in his appetite during the whole season, till the beginning of October, when the most delicate morsel would scarcely tempt him to eat. Some writers say, that the tortoise will live a year and a half without any kind of nourishment; whatever may be the fact in the case, I cannot say, but I found that a short abstinence considerably increased the disposition of my favourite for food. Major Le Conte remarks, that the land tortoise feeds "on fruit, insects, and edible fungi, particularly the different species of *clavaria*." The land tortoise of Europe, it is said, lives almost wholly on vegetables, and that it seldom makes its prey of snails and worms unless other food is not found in grateful plenty. I am disposed to think that our animal is almost wholly carnivorous. I never knew but one instance of its ever tasting any kind of vegetable, except a mushroom, which, it is well known, approaches nearer to animal substance than any other plant. Neither am I quite sure that the instance alluded to forms an exception, for the tortoise was only seen near a mushroom, which, upon examination, seemed to have been bitten by it. The peculiar structure of the jaws favours, I think, the idea that it is carnivorous; these are armed with bony plates and not with teeth, which seem, in most cases, essential to animals that support life with vegetable nourishment. On one occasion, after an abstinence of a week, I threw into my tortoise many kinds of vegetables, such as purslain, lettuce, clover, and dandelion, but he did not fancy them in the least, and would not eat a mouthful; but animal food of any kind, either raw or cooked, he swallowed with avidity; the common earth-worm appeared to be his favourite dish.*

The Rev. Mr. White, in the history of his tortoise, remarks, "that no part of its behaviour ever struck him more than the extreme timidity it always expressed with regard to rain; for though it has a shell that would secure it against the wheel of a loaded cart, yet does it discover as much solicitude about rain, as a lady dressed in all her best attire, shuffling away on the first sprinkling, and running its head up in a corner. If attended to, it becomes an excellent weather-glass, for as soon as it walks elate, and, as it were, on tip-toe, feeding with great eagerness in the morning, so sure will it rain before night." Now my mute favourite was the reverse of all this,

> He hears the fearful tempest sing,
> Yet seeks no shelter to avoid the storm;

whenever a shower fell, he was sure to be in the midst of it, though immediately before I have observed him asleep under his roof. On such occasions he was remarkably active, elevating his head and showing every symptom of pleasure and expectation. I supposed, that, at these wet seasons, he was in search of earth-worms, of which, I have before noticed, he was exceedingly fond, and which generally come from their hiding places during showers. From his love for this kind of food, I also expected to find him not altogether a diurnal animal, but that he would wander about late in the evening, or early in the morning, in search of it, but I never found him away from home after dark, or fairly awake before sun-rise.

Spirit and activity were, certainly, not among the qualifications of my interesting captive. Often have I seen him, for hours together, stand motionless as a statue, riveted, apparently, to the spot—his eyes fixed on vacancy, and so absorbed in his contemplations, that no sound would disturb his tranquillity. He seemed to sleep, and certainly remained inactive many hours during every day; this he did at one time in a horizontal position, with his hinder feet

* The account which I have given of the diet of my land tortoise, and his predilection for animal food, is strictly correct; but my friend Mr. Titian R. Peale informs me, that in two or three individuals of the *testudo clausa* which he had domesticated, one seemed to prefer fruits and esculent plants, and another, animal food, a difference of taste probably arising from the greater or less abundance of the kind of food in their natural haunts. This appetite for different kinds of food is very remarkable in the ophidian race. In the Philadelphia Museum I saw, some years since, two rattle-snakes, (Crotali,) in different cages—one of the snakes would devour nothing but mice or other small quadrupeds, and never eat a bird dead or alive; while the other fed on nothing but birds. In the cage with the first rattle-snake, there was a canary bird kept, and it was surprising to see how fearlessly and familiarly the little songster would perch on the back and head of the reptile, pick at his eyes, and scrape his bill against his scales. The bird and the snake were kept together a long time. Mr. Peale informs me, that he once possessed a fine large black-snake, (*coluber constrictor*,) which refused all the ordinary food of which that species of reptile is commonly so fond; birds, mice, and almost every other kind of food, was tried in vain—nothing could provoke him to eat; it seemed as if he would rather starve to death, than relieve his hunger by any thing that was offered. At last a land lizard, the *agama undulata*, was placed in his cage; this he seized and devoured with great avidity. He was kept alive with the same kind of food for a long time. The snake was captured in the woods of New-Jersey, where the agama is very abundant.

thrown out of his shell on the ground, where they seemed to lie paralized; or at another time, with his shell inclined against the walls of his chamber. Though I do not wish to abate any thing from the natural talents of my favourite, I cannot assign this inclination of his shell, in hours of repose, to the same cause as that ascribed by the Rev. Mr. White to his domesticated tortoise; he observes on this subject "that though he has never read that planes inclined to the horizon received a greater share of warmth from an autumnal sun, he inclines his shell, by tilting it against the walls, to collect and admit every feeble ray." I found that my animal chose this position oftener in the shade than in the sunshine, and I concluded that this was done to relieve the pressure from the under shell, his whole weight being then supported by the wall, and the ground, which acted like the abutments of an arch, of which his upper shell was the curvature.

He often betrayed a very considerable share of sagacity. After making many fruitless efforts to scale the walls of his prison, I detected him more than once endeavouring to make his escape by undermining the foundation. Mr. White observes, that his animal quickly recognized those persons who bestowed upon it kind attentions, and that as soon as the good old lady came in sight, who had waited on it for more than thirty years, it hobbled towards her with awkward velocity; some such expression of gratitude and recognition I more than once noticed in my little friend. Mr. T. R. Peale, who has kept a number of the *T. clausa* in his garden, informs me, that whenever the plate on which their food was brought to them was scraped with a knife, they would all scamper to the usual spot, like so many chickens. One good quality in my old tortoise I must not forget to notice; he would not, on any occasion, be ruffled in his temper, but always preserved an unvarying equanimity; still, however, he maintained a superiority over one I procured for his companion in captivity. I once, however, saw him deliberately take a piece of meat out of the mouth of the other, who submitted to his loss with tacit acquiescence. It has been said, that the males of this species have frequent contests, butting against each other with such force, as to be heard at a considerable distance; but as my animals were not of a quarrelsome temper, I never witnessed any such exhibitions.

In the early part of October, he seemed to prepare himself for his long winter's sleep—he would eat nothing, and I often noticed him descending into the little subterraneous excavation I had prepared for him for this purpose. I now weighed him with great accuracy. The length of his shell was nearly six inches, and the breadth just half the length; these proportions, I suppose, generally prevail, as I found them the same in several instances. His weight was just one pound. From the observations of Dr. George Ent, made, during a series of years, on the weight of a land tortoise, at the time of his retiring under ground in the autumn, compared with its weight on its re-appearance in the spring—the animal was found to lose not more than about a drachm in the pound; my observations have confirmed this statement. Very shortly after losing his appetite, my amusing friend finally buried himself in his cavern, and in that situation remained undisturbed, passing the cold winter months in one of the most profound of all slumbers, till a genial vernal sun "awoke his torpid life."

I cannot close the history of my domestic tortoise without recording his melancholy fate. The early part of the last winter of his life was remarkably wet, so that the cavern in which he reposed during the cold weather, became, as I afterwards discovered, completely filled with water. During some fine sunny weather in the latter part of the succeeding April, I anxiously expected his re-appearance from his protracted slumber, as usual—but I waited for him in vain. One day of disappointment was succeeded by another, and I became at last so anxious and impatient that I dug into his cave, and, to my surprise, found it filled with a solid block of ice, in the centre of which my poor *testudo clausa* lay perfectly frozen up, like an insect in a mass of amber. I carefully broke away, with a hatchet, the ice in which he was encrusted. This operation was somewhat difficult, as his feet and legs were not withdrawn beneath his shell. I then placed him in a cold water bath, and in a few minutes I had the pleasure to observe that he manifested symptoms of returning life. In a few minutes more he exhibited vigorous activity, and walked abroad in the sunshine, with all the bouyancy of former days. The weather suddenly changing to intense cold, in the course of the afternoon, I brought my rescued pet into the house, and kept him for some weeks in my study; but I could not tempt him to taste the most delicate morsel, and after *yawning* and dragging through the room at intervals, he at last died about the first of June.

That the life of the tortoise considerably exceeds the period of a century, many well-attested examples might be produced, and, as observations of this kind have been made on the animal, when in a state of captivity, we may reasonably conclude, that, if at liberty, he would reach a still greater age. Major Le Conte justly remarks, that the *testudo clausa* "has been cited as an example of longevity among animals of the lower classes; but the finding of an individual with a name and date engraved on its sternum, proves nothing—the idle and the foolish are fond of inscribing their names every where, and may as well ante-

RED FLAMINGO .

date the time by half a century, as state the true year of their attempts at immortality." In conclusion, we cannot help remarking, that Providence, as it were, to show us the small value of animal existence, abstractly considered, has bestowed great longevity on a reptile that squanders away more than two-thirds of its life in the most profound torpor, and in joyless stupidity.

Hints respecting the Domestic Cat.—As it is not my intention to write the natural history of the domestic cat, I shall not assert with many authors, that the wild cat, which is confined to the woods of Europe and Asia, is the parent stock of the whole race; nor will I attempt to decide on that particular species which was brought by the Indians to Columbus, when he discovered America. Thus much, however, I may say, that wild cats are found in almost every country and climate. My present design confines me to the common house cat, called by the familiar name of tortoise-shell,* tabby, or puss. Though Sonini† has given puss traits of character which place him in a most amiable and interesting point of view, I feel compelled, though I do it with great reluctance, to pronounce him ungrateful, ungenerous, and deceitful; though with all these abominable qualities, an important domestic. But this is all foreign to the subject: My present intention is to inquire into the *cause* of some signs which the cat exhibits, at particular stages of the weather.

Linnæus gives, as one of the specific characteristics of the domestic cat, that he washes his face and behind his ears with his fore feet at the approach of a storm.‡ However strange or fanciful this may appear, there is, I think, no doubt of the fact. I have observed it often, and have found it an unerring prognostic of falling weather; in winter, of snow, and in summer, of rain. I shall now offer what I think a sufficient explanation of this remarkable fact. We know that some animals have a greater capacity for electricity, and exhibit much stronger signs of it, than others. The gymnotus electricus, or electrical eel, will give a *shock* to any number of persons, in the same manner as the leyden jar. The electrical properties of the torpedo, or cramp-fish, are so remarkable, that for a long time they were considered fabulous. Some other fish might be mentioned, as possessing this property. The experiment of producing sparks of electrical fire, by rubbing the back of a cat, is familiar to almost every one;§ the glittering of the eyes by night, may, I think, be also stated as another proof of the presence of the fluid. The ears of the cat, and some portions of the face, are without hair; such places are good conductors of electricity; but the whole body of the animal being enveloped in a hairy covering, is a non-conductor. If, therefore, the fluid escapes, or passes off in any considerable quantity, it must be at the ears or face. This can be proved by experiment: Upon rubbing the back of the animal in favourable weather, and presenting your knuckle to the ear, a spark will be received;—a spark, however, cannot be obtained from any part of the body, a few scintillations only following the hand in the act of rubbing. Cats, we know, have a natural antipathy to water and moist air, and delight in dry and warm situations. It is hardly necessary to state, that a damp atmosphere is one of the best conductors of electricity, or that a dry one is necessary for its collection and retention. From what has now been advanced, the conclusion is obvious. The vapour or humidity of the air, serving as a conductor, draws off or absorbs the electric matter from the animal, and the fluid passing off with more readiness, and in the greatest quantity, at the ears, must occasion sensations in that particular part, either agreeable or troublesome, which induces the motion of the fore foot as above stated. That some animals are more readily affected by changes in the atmosphere than others, and that they exhibit signs of these variations, cannot be doubted. The difficulty is, to explain with clearness and precision how this takes place. Mr. J. Taylor, in an interesting little volume, called the *Complete weather guide*, has given a chapter on the common and familiar signs exhibited by animals which indicate approaching changes of weather; in this chapter, he passes without notice, our friend, the CAT.

* It has been asserted that the tortoise-shell cat is indigenous to Spain and that it constitutes a distinct variety of the common species; this opinion, I have good reason to believe, has no sufficient ground for its support.

† See Sonini's Travels in Egypt.

‡ See Turton's, Linnæus, vol. i. p. 49.

§ It is said that black cats give out more electric fire than those of any other colour. If this be a fact, may it not lead to some important results in the construction of electric machines. It has been found that the power of a white glass cylinder, is considerably increased by coating the inner surface with a coloured electric, such as rosin, or bees-wax.

RED FLAMINGO.

PHŒNICOPTERUS RUBER.

[Plate IV. Vol. 3.]

Le Flammant, BRISS. VI, *p.* 533, *pl.* 47, *fig.* 1.—BUFF. VIII, *p.* 475, *pl.* 39. *Pl. Enl.* 63.—LATH. *Syn.* III, *p.* 299.—*Arct. Zool. No.* 422.—*Phœnicopterus Bahamensis*, CATESBY, I, *pl.* 73, 74.—Philadelphia Museum.

THIS singular but beautiful plumed bird, strictly belongs to the North American Ornithology, although it is found

only in the most southern districts of the country. On the coast of Florida, and in the Gulf of Mexico, it is frequently seen, but not in numbers equal to those that congregate on the West India islands, and particularly the shores and lagoons, bordering the Caribean Sea.

The specimen from which the annexed drawing was made, belongs to the Philadelphia Museum, and is one of the most perfect of its kind. This was shot by Mr. T. R. Peale, on the sea-shore of Colombia, during his late visit to that country, but owing to the great shyness of these birds, he was unable to procure more than the one specimen, although, he said, several hundreds associated together; but the parts they resort to were so difficult of access, and the timidity of the birds so great, rendered it impossible, without too great exertion, to be more successful. This bird was shot at night time by the aid of lightning, and secured only on the following day.

American Naturalists have not been able to furnish anything new relative to this remarkable bird, and among foreign authors, Dr. Latham, in his Synopsis, has given the most authentic and interesting particulars, which are here introduced.

"This remarkable bird has the neck and legs in a greater disproportion than any other bird; the length from the end of the bill to that of the tail is four feet two or three inches, but to the end of the claws, measures sometimes more than six feet. The bill is four inches and a quarter long, and of a construction different from that of any other bird; the upper mandible very thin and flat, and somewhat moveable; the under thick, both of them bending downwards from the middle; the nostrils are linear, and placed in a blackish membrane; the end of the bill as far as the bend is black, from thence to the base reddish yellow, round the base quite to the eye covered with a flesh coloured cere; the neck is slender, and of a great length; the tongue large, fleshy, filling the cavity of the bill, furnished with twelve or more hooked papillæ on each side, turning backwards; the tip a sharp cartilaginous substance. The bird when in full plumage is wholly of a most deep scarlet, (those of Africa said to be the deepest) except the quills, which are black; from the base of the thigh to the claws measures thirty-two inches, of which the feathered part takes up no more than three inches; the bare part above the knee thirteen inches, and from thence to the claws sixteen; the colour of the bare parts is red, and the toes are furnished with a web as in the duck genus; but it is deeply indented. *The legs are not straight, but slightly bent, the shin rather projecting.*

"These birds do not gain their full plumage till the third year. In the first they are of a grayish white for the most part; the second of a clearer white, tinged with red, or rather rose colour; but the wings and scapulars are red; in the third year a general glowing scarlet manifests itself throughout; the bill and legs also keep pace with the gradation of colour in the plumage, these parts changing to their colours by degrees as the bird approaches to an adult state.

"Flamingoes prefer a warm climate, in the old continent not often met with beyond forty degrees north or south. Every where seen on the African coast, and adjacent isles, quite to the Cape of Good Hope, and now and then on the coasts of Spain, Italy, and those of France lying in the Mediterranean sea; being at times met with at Marseilles, and for some way up the Rhone. In some seasons frequents Aleppo, and parts adjacent. Seen also on the Persian side of the Caspian sea, and from thence along the western coast as far as the Wolga; though this at uncertain times, and chiefly in considerable flocks, coming from the north coast mostly in October and November; but so soon as the wind changes they totally disappear. They breed in the Cape Verd isles, particularly in that of Sal. The nest is of a singular construction, made of mud, in shape of a hillock, with a cavity at top; in this the female lays generally two white eggs,* of the size of those of a goose, but more elongated. The hillock is of such an height as to admit of the bird's sitting on it conveniently, or rather standing, as the legs are placed one on each side at full length.† The young cannot fly till full grown, but run very fast.

"Flamingoes, for the most part, keep together in flocks; and now and then are seen in great numbers together, except in breeding time. Dampier mentions haying, with two more in company, killed fourteen at once; but this was effected by secreting themselves; for they are very shy birds, and will by no means suffer any one to approach openly near enough to shoot them.‡ Kolben observes that they are very numerous at the Cape, keeping in the day on the borders of the lakes and rivers, and lodging themselves of nights in the long grass on the hills. They are also common to various places in the warmer parts of America, frequenting the same latitudes as in other quarters of the world; being met with in Peru, Chili, Cayenne,§ and the coast of Brazil, as well as the various islands of the West Indies. Sloane found them in Jamaica; but particularly at the Bahama islands, and that of Cuba, where

* They never lay more than three, and seldom fewer. Phil. Trans.

† Sometimes will lay the eggs on a projecting part of a low rock, if it be placed sufficiently convenient so as to admit of the legs being placed one on each side. Linn.

‡ Davies talks of the gunner disguising himself in an ox hide, and by this means getting within gun-shot. Hist. Barbad. p. 88.

§ Called there by the name of Tococo.

they breed. When seen at a distance they appear as a regiment of soldiers, being arranged alongside of one another, on the borders of the rivers, searching for food, which chiefly consists of small fish, or the eggs of them, and of water insects, which they search after by plunging in the bill and part of the head; from time to time trampling with their feet to muddy the water, that their prey may be raised from the bottom. In feeding are said to twist the neck in such a manner that the upper part of the bill is applied to the ground; during this, one of them is said to stand sentinel, and the moment he sounds the alarm, the whole flock take wing. This bird when at rest stands on one leg, the other being drawn up close to the body, with the head placed under the wing on that side of the body it stands on.

"The flesh of these birds is esteemed pretty good meat; and the young thought by some equal to that of a partridge; but the greatest dainty is the tongue, which was esteemed by the ancients an exquisite morsel. Are sometimes caught young and brought up tame; but are ever impatient of cold, and in this state will seldom live a great while, gradually losing their colour, flesh, and appetite; and dying for want of that food which in a state of nature, at large, they were abundantly supplied with."

For the Cabinet of Natural History.

A NOTICE OF THE DUCKS, AND SHOOTING OF THE CHESAPEAKE BAY.

Mr. Editor:—As it is of great importance to the cause of science, that a correct natural history of our country should be established and preserved, every erroneous assertion that remains uncontradicted by those on this side of the Atlantic, will inevitably be credited in Europe; and let our minds, manners, or institutions, be misrepresented as they may, we must maintain truth, if possible, in the history of our natural productions.

A writer over the signature of S. H. in the Turf Register, for August, 1833, in an interesting account of the habits of the Ducks that are found in the Chesapeake Bay, and of the different modes of destroying them, makes two or three statements that require notice, as they may mislead naturalists at a distance, and produce wrong impressions at home.

He says, there are two varieties of Canvass-back Duck; "one has a shorter neck than the other, and its breast, (unlike the other's,) is of a dark red colour." Having been a visitor to those waters for many years on Duck-shooting expeditions, I have closely observed the variety of water fowl that frequent them during the fall and winter. I have on several occasions been accompanied by naturalists of great industry and intelligence, and neither them nor myself have ever been able to discover more than the single species of Canvass-back, (Anas *valisineria*.)

The writer must certainly have mistaken birds of different ages for different varieties, the yearling being generally of a lighter colour in the marking than the more advanced bird. The old Red-heads resemble, in tint, the Canvass-back, and it is only by the shape and colour of the bill, that a partial observer can distinguish them. The male Canvass-back is also much darker than the female, and may have occasioned the error. Mr. Titian R. Peale, Mr. George Ord, and Mr. C. L. Bonaparte, all ornithologists of great eminence, and accustomed to visiting the Chesapeake, particularly Mr. Peale, support Wilson in the belief of the existence of but one variety.

The same writer also states, that the "Canvass-backs breed in great abundance with other Ducks on the sea marshes and small islands that are not habitable, along the shores of the Gulf of Mexico. Large patches of ground are taken up with their nests, which are about four feet apart."—In *this* assertion he is undoubtedly mistaken. The Black Duck, (Anas *obscura*,) and the Summer Duck, (A. *sponsa*,) are the only Ducks that breed to any extent in the United States. It occasionally happens that *crippled* Ducks of other species consort together, and remain through the warm season, but this is so alien to their usual habits, that it cannot be regarded as natural to them.

What have been mistaken for the nests and eggs of the Canvass-backs, have no doubt been those of other birds, perhaps a species of Gull, some of which tribe deposit eggs not very unlike the Duck's and quite as edible. He also asserts, that "Ducks of different species never associate—never roost together, nor fly in the same flock, when they are seared up together from the feeding ground." If I was not convinced by his general correctness, that the author has witnessed the habits of these birds himself, to a certain extent, I should suppose he had taken the observations of very superficial observers for his guide. I have, certainly, hundreds of times, seen Canvass-backs, Red-heads, Black-heads, and Bald-pates, roosting, feeding, and flying together; the latter, on many occasions, when they had not been alarmed from their feeding ground, but making their morning and evening flight, and when it must have been a matter of choice. I have myself, times beyond number (and also witnessed the same in others) killed at one discharge two species out of the same flying

or sitting flock. This, I should presume, had been the experience of most Duck shooters on the Chesapeake.

The Red-head and Canvass-back are most accustomed to associate in feeding and flying, and nothing is more common than to hear the whistle of the Bald-pate in a flock of some scores of the kinds just mentioned, which whistle, in a flying flock, is always dreaded by the gunner as indicative of an alarm in these watchful birds, which soon extends to the rest, and prevents the possibility of a close shot.

The writer above alluded to, has named the species of Ducks usually found on the Chesapeake and its tributary streams; but as he has given different names for the same birds, it may mislead. For example, he speaks of the Widgeon and Bald Pate as two varieties, when they are the same species. It is the same with the Bull or Buffel head, and the Dipper; and the Coote or Surf Duck, I presume, to be one of his varieties of Black-head. He does not mention the little Ruddy Duck, or Heavy-tail, as it is called, although they abound in every nook and cove.

The following is a correct table of the Ducks that are found on those waters:—

Swan, (*Cygnus Americanus.*) Goose, (Anas *Canadensis.*) Brant, (A. *bernicla.*) Canvass-back, (A. *valisineria.*) Red-head, (A. *ferina.*) Bald-pate, or Widgeon, (A. *Americana.*) Blue-bill, or Black-head, (A. *marila.*) Scoter Duck, (A. *nigra.*) Tufted Duck, (A. *fuligula,* Wilson and Fuligula *rufitorques,* Bonaparte.) Blue-wing Teal, (A. *discors.*) Green do. do. (A. *crecca.*) Mallard, (A. *boschas.*) Black Duck, (A. *obscura.*) Buffel-head, Butter-box, or Dipper, (A. *albeola.*) Gadwall, or Grey Duck, (A. *strepera.*) Spoon-bill, or Shoveller, (A. *clypeata.*) Sprig, or Pin-tail, (A. *acuta.*) Golden-eye, (A. *clangula.*) Velvet, or Channel Duck, (A. *fusca,*) Ruddy Duck, or Heavy-tail, (A. *rubidus.*) South Southerly, Long-tailed Duck, or Old Wives, (A. *glacialis.*) Surf Duck, (A. *perspicillata.*) Water Witch, or little Grebe, (Podiceps *Carolinensis,*) and the Horned Grebe, sometimes called Water Witch, (P. *cornutus,*) Goosander, (Mergus *merganser,*) and the Red-breasted Merganser, Hairy-crown, or Fisherman, (M. *serrator.*)

I will close my strictures on the Register correspondent, and give the result of a few days shooting on the Chesapeake, last fall, by a party of four gentlemen, of which I was one. We were landed on our Point, from the Port Deposit steam boat, at 2 P. M. Weather cool; little wind, and that favourable; a small flight—

By dark—the game was - -	1 Swan.	18 Canvass-backs and Red-heads.
2d day—wind and weather fair, flight pretty good, -	53	do. do. do. etc.
3d day—sultry—not a breath of air, and a poor flight, -	51	do. do. do.
4th day—same weather, flight -	1 Swan.	
still less - - -	38	Canvass-back, etc.
5th day, till 9 A. M.—weather and flight good, - -	39	do. do.
	201	

Of this number, there were, 2 Swans—92 Canvass-backs—86 Red-necks—13 Black-heads—4 Buffel-heads—1 Golden-eye—1 Black Duck—1 Mallard, and 1 Fisherman.

I do not give this statement as great success; but it was good,—considering the space of time,—that all were shot on the wing, from the points,—and that during two days every thing was unfavourable, and exactly that combination of circumstances that would prevent a resident on the Bay from even loading his gun.

Being a thorough Sportsman yourself, Mr. Editor, you are fully aware that the pleasure of such amusements does not depend solely upon the quantity of game bagged; for if so, the *toling,* or *skiffing* shots, procuring more birds, would consequently produce more delight. But *that* murderous mode being deficient in the great cause of pleasure, *excitement,* it is rarely practised by the real Sportsman. Any person, who can hold a gun to his shoulder, can kill Ducks on the water; but to strike them at 60 or 80 yards distance, when flying at the rate of 87 feet in a second of time, requires a dexterity in the use of the gun that every man cannot boast of; and to do with even comparative certainty, what few can attain to, is a pleasure that the indolent *toler* cannot conceive.

To have a shot, occasionally, even without killing, is an agreeable mode of passing a certain time, somewhat like Dr. Franklin's *nibbling* fisherman; for you have leisure to calculate the value of your gun, the range of your shot, and your deficiencies, preparatory to the next bird. But when you have a good point,—fine weather,—fair wind,—handsome flight,—industrious dog,—trusty gun,—genuine Pigou or Dupont,—Sparkes' single B., and a friend to praise a good and excuse a bad shot,—no man can want a doctor, or, for the time, an additional pleasure in the world.

I. T. S.

DEER HUNTING.

The different modes of destroying Deer are probably too well understood, and too successfully practised, in the United States; for, notwithstanding the almost incredible abundance of these beautiful animals in our forests and prairies, such havoc is carried on amongst them, that, in a few centuries, they will probable be as scarce in America, as the Great Bustard now is in Britain.

We have three modes of hunting Deer, each varying, in some slight degree, in the different states and districts. The first is termed *Still Hunting*, and is by far the most destructive. The second is called *Fire-light Hunting*, and is next in its exterminating effects. The third, which may be looked upon as a mere amusement, is named *Driving*. Although many Deer are destroyed by this latter method, it is not by any means so pernicious as the others. These methods I shall describe separately.

Still Hunting is followed as a kind of trade by most of our frontier men. To be practised with success, it requires great activity, an expert management of the rifle, and a thorough knowledge of the forest, together with an intimate acquaintance with the habits of the Deer, not only at different seasons of the year, but also at every hour of the day, as the hunter must be aware of the situations which the game prefers, and in which it is most likely to be found, at any particular time.

Illustrations of any kind require to be presented in the best possible light. We will therefore suppose that we are now about to follow the *true hunter*, as the Still Hunter is also called, through the interior of the tangled woods, across morasses, ravines, and such places, where the game may prove more or less plentiful, even should none be found there in the first instance. We will allow our hunter all the agility, patience, and care, which his occupation requires, and will march in his rear, as if we were spies, watching all his motions.

His dress, you observe, consists of a leather hunting-shirt, and a pair of trowsers of the same material. His feet are well moccasined; he wears a belt round his waist; his heavy rifle is resting on his brawny shoulder; on one side hangs his ball-pouch, surmounted by the horn of an ancient Buffalo, once the terror of the herd, but now containing a pound of the best gunpowder; his butcher-knife is scabbarded in the same strap, and behind is a tomahawk, the handle of which has been thrust through his girdle. He walks with so rapid a step, that probably few men could follow him, unless for a short distance, in their anxiety to witness his ruthless deeds. He stops, looks at the flint of his gun, its priming, and the leather cover of the lock, then glances his eye towards the sky, to judge of the course most likely to lead him to the game.

The heavens are clear, the red glare of the morning sun gleams through the lower branches of the lofty trees, the dew hangs in pearly drops at the top of every leaf. Already has the emerald hue of the foliage been converted into the more glowing tints of our autumnal months. A slight frost appears on the fence-rails of his little corn-field. As he proceeds, he looks to the dead foliage under his feet, in search of the well known traces of a buck's hoof. Now he bends toward the ground, on which something has attracted his attention. See! he alters his course, increases his speed, and will soon reach the opposite hill. Now, he moves with caution, stops at almost every tree, and peeps forward as if already within shooting distance of the game. He advances again, but how very slowly! He has reached the declivity, upon which the sun shines in all its growing splendour. But mark him! he takes the gun from his shoulder, has already thrown aside the leathern cover of the lock, and is wiping the edge of his flint with his tongue. Now he stands like a monumental figure, perhaps measuring the distance that lies between him and the game, which he has in view. His rifle is slowly raised—the report follows—and he runs. Let us run also. Shall I speak to him, and ask him the result of this first essay? Assuredly, reader, for I know him well.

"Pray, friend, what have you killed?" for to say, "what have you shot at?" might imply the possibility of his having missed, and so might hurt his feelings.—"Nothing but a buck." "And where is it?" "Oh, it has taken a jump or so, but I settled it, and will soon be with it. My ball struck, and must have gone through his heart." We arrive at the spot, where the animal had laid itself down among the grass in a thicket of grape-vines, sumachs, and spruce-bushes, where it intended to repose during the middle of the day. The place is covered with blood, the hoofs of the Deer have left deep prints in the ground as it bounced in the agonies produced by its wound; but the blood that has gushed from its side, discloses the course which it has taken. We soon reach the spot. There lies the buck, its tongue out, its eye dim, its breath exhausted; it is dead. The hunter draws his knife, cuts the buck's throat almost asunder, and prepares to skin it. For this purpose he hangs it upon the branch of a tree. When the skin is removed, he cuts off the hams, and abandoning the rest of the carcass to the wolves and vultures, reloads his gun, flings the venison, enclosed by the skin, upon his back, secures it with a strap, and walks off in search of more game, well knowing that, in the immediate neighbourhood, another at least is to be found.

Had the weather been warmer, the hunter would have sought for the buck along the *shadowy* side of the hills. Had it been the spring season, he would have led us through some thick cane-brake, to the margin of some remote lake, where you would have seen the Deer immersed to his head in the water, to save his body from the tormenting attacks of moschettoes. Had winter overspread the earth with a covering of snow he would have searched the low damp woods, where the mosses and lichens, on which at that period the Deer feeds, abound, the trees being generally crusted with them for several feet from the ground. At

one time, he might have marked the places where the Deer clears the velvet from his horns, by rubbing them against the low stems of bushes, and where he frequently *scrapes* the earth with his fore-hoofs; at another, he would have betaken himself to places where persimons and crab-apples abound, as beneath these trees the Deer frequently stops to munch their fruits. During early spring, our hunter would imitate the bleating of the doe, and thus frequently obtain both her and the fawn; or like some tribes of Indians, he would prepare a Deer's head, placed on a stick, and creeping with it amongst the tall grass of the prairies, would decoy the Deer within reach of his rifle. But we have seen enough of the *still hunter*. Let it suffice for me to add, that by the mode pursued by him, thousands of Deer are annually killed, many individuals shooting these animals merely for the skin, not caring for even the most valuable portions of the flesh, unless hunger, or a near market, induces them to carry off the hams.

The mode of destroying Deer by *fire-light*, or, as it is named in some parts of the country, *forest-light*, never fails to produce a very singular feeling in him who witnesses it for the first time. There is something in it which at times appears awfully grand. At other times a certain degree of fear creeps over the mind, and even affects the physical powers of him who follows the hunter through the thick undergrowth of our woods, having to leap his horse over hundreds of huge fallen trunks, at one time impeded by a straggling grape-vine crossing his path, at another squeezed between two stubborn saplings, whilst their twigs come smack in his face, as his companion has forced his way through them. Again, he every now and then runs the risk of breaking his neck, by being suddenly pitched headlong on the ground, as his horse sinks into a hole, covered over with moss. But I must proceed in a more regular manner, and leave my reader to judge whether such a mode of hunting would suit his taste or not.

The hunter has returned to his camp or his house, has rested and eaten of his game. He waits impatiently for the return of night. He has procured a quantity of pine-knots, filled with resinous matter, and has an old frying-pan, that, for aught I know to the contrary, may have been used by his great-grandmother, in which the pine-knots are to be placed when lighted. The horses stand saddled at the door. The hunter comes forth, his rifle slung on his shoulder, and springs upon one of them, while his son, or a servant, mounts the other, with the frying-pan and the pine-knots. Thus accoutred, they proceed towards the interior of the forest. When they have arrived at the spot where the hunt is to begin, they strike fire with a flint and steel, and kindle the resinous wood. The person who carries the fire, moves in the direction judged to be the best. The blaze illuminates the near objects, but the distant parts seem involved in deepest obscurity. The hunter who bears the gun keeps immediately in front, and after a while discovers before him two feeble lights, which are procured by the reflection of the pine fire from the eyes of an animal of the deer or wolf kind. The animal stands quite still. To one, unacquainted with this strange mode of hunting, the glare from its eyes might bring to his imagination some lost hobgoblin that had strayed from its usual haunts. The hunter, however, nowise intimidated, approaches the object, sometimes so near as to discern its form, when raising the rifle to his shoulder, he fires and kills it on the spot. He then dismounts, secures the skin and such portions of the flesh as he may want, in the manner already described, and continues his search through the greater part of the night, sometimes until the dawn of day, shooting from five to ten Deer, should these animals be plentiful. This kind of hunting proves fatal, not to the Deer alone, but also sometimes to wolves, and now and then to a horse or a cow, which may have straggled far into the woods.

Now, reader, prepare to mount a generous, full-blood Virginian Hunter. See that your gun is in complete order; for, hark to the sound of the bugle and horn, and the mingled clamour of a pack of harriers! Your friends are waiting you, under the shade of the wood, and we must together go *driving* the light-footed Deer. The distance over which one has to travel is seldom felt, when pleasure is anticipated as the result; so, galloping we go pell-mell through the woods, to some well-known place, where many a fine buck has drooped its antlers under the ball of the hunter's rifle. The servants, who are called the *drivers*, have already begun their search. Their voices are heard exciting the hounds, and unless we put spurs to our steeds, we may be too late at our stand, and thus lose the first opportunity of shooting the fleeting game as it passes by. Hark again! the dogs are in chase, the horn sounds louder and more clearly. Hurry, hurry on, or we shall be sadly behind!

Here we are at last! Dismount, fasten your horse to this tree, place yourself by the side of that large yellow poplar, and mind you do not shoot me! The Deer is fast approaching; I will to my own stand, and he who shoots him dead wins the prize.

The Deer is heard coming. It has inadvertently cracked a dead stick with its hoof, and the dogs are now so near it that it will pass in a moment. There it comes! How beautifully it bounds over the ground! What a splendid head of horns! How easy its attitudes, depending, as it seems to do, on its own swiftness for safety! All is in vain, however: a gun is fired, the animal plunges and doubles with

incomparable speed. There he goes! He passes another stand, from which a second shot, better directed than the first, brings him to the ground. The dogs, the servants, the sportsmen, are now rushing forward to the spot. The hunter who has shot it is congratulated on his skill or good luck, and the chase begins again in some other part of the woods.

A few lines of explanation may be required to convey a clear idea of this mode of hunting. Deer are fond of following and retracing the paths which they have formerly pursued, and continue to do so even after they have been shot at more than once. These tracks are discovered by persons on horseback in the woods, or a Deer is observed crossing a road, a field, or a small stream. When this has been noticed twice, the Deer may be shot from the places called *stands* by the sportsman, who is stationed there, and waits for it, a line of stands being generally formed so as to cross the path which the game will follow. The person who ascertains the usual pass of the game, or discovers the parts where the animal feeds or lies down during the day, gives intimation to his friends, who then prepare for the chase. The servants start the Deer with the hounds, and, by good management, generally succeed in making it run the course that will soonest bring it to its death. But, should the Deer be cautious, and take another course, the hunters, mounted on swift horses, gallop through the woods to intercept it, guided by the sound of the horns and the cry of the dogs, and frequently succeed in shooting it. This sport is extremely agreeable, and proves successful on almost every occasion.—*Audubon.*

ON THE PRESERVATION OF THE PARTRIDGE.

The favourite game bird of the Sportsman, is the Partridge, and towards it he always manifests feelings of solicitude, to preserve it from undue destruction, whether by the severity of our winters, or the rapacity of its enemies; and the expense which he frequently incurs, towards the accomplishment of this object, evidently proves, that he regards this interesting bird altogether as a source of pleasure, and not of profit, and when he pursues them for recreation, although he is anxious to secure a full bag, and prove that he is worthy of the title he claims, he is often checked, in the midst of his success, by feelings which prompt him to forbear further destruction. Has not every *true* Sportsman, sometime in the course of his experience,—when, on the close of a successful day's hunt found himself in the midst of a well scattered covey, and while he was working destruction to the right and left,—felt such sensations creeping over him, as to cause him suddenly to desist from further pursuit? And what is it that checks him in the harvest he is gathering?—It is not consciousness of doing wrong, that bids him forbear, for there is no moral responsibility attached to the action; but it is from a conviction, that further prosecution of his success on that covey, will dry up the source of his future pleasure, and leave none to produce offspring for the next season.

No Sportsman will visit the remaining part of a covey, after he has reduced it to four or five birds. This is one method of preserving game, and may be called *protection by forbearance.*

Some years since, a large number of Partridges were purchased and kept through the winter season, by the united efforts of a number of Sportsmen in Philadelphia, and the neighbouring parts of New-Jersey. The number of birds, I think, exceeded two thousand, and when set at liberty, in the following spring, were let off in pairs over a very extensive part of the neighbourhood. The benefit arising from this course, was manifested during the following season; but this plan, which one would think should conciliate the friendship of the farmers, and excite good will towards those gentlemen who effected this object, had on the minds of many a contrary effect, although the birds were bought of them in the winter, and returned again in March.

In the succeeding fall, many landholders came to a resolution to prevent Sportsmen from shooting on their grounds; and accordingly printed notices were signed by them, and circulated throughout the neighbourhood, warning all gunners from trespassing on their farms, under the severest penalties of the law. This, of course, was a check to like operations in future years; and I believe it has never been attempted, to any extent, since. Many Sportsmen, however, purchase all the living birds to be met with on sale, and keep them over the winter, and release them again in the spring. This may pass, then, as the second method of preserving game, viz. *protection by sustenance.*

The last manner of preserving the Partridge, is by *persecution.* Yes, strange as it may appear, moderate persecution has a tendency to protect game. It is natural for inferior animals to avoid the persecution of their superiors, and there are none whose timidity is more easily excited than that of the Partridge. When undisturbed, these birds will visit the stackyards and gardens, and even mix with the domestic fowls, to share their food. But a little persecution will soon drive them to seek shelter in the brakes and thickets of the neighbourhood; before, they

were unsuspicious and familiar—now they are cautious and exceedingly vigilant; formerly, they fed on open ground, could be seen by the road-side, or in the foot-path of the passenger—but now, every noise alarms them, and they glean their simple fare only in the tall grass and stubble, or among the bushes. A few shots at a covey of Partridges will put them more on the alert than the visitations of their natural enemies, and in this way the Sportsman destroys that state of domesticity in these birds which may be observable on all those farms prohibited to the footsteps of the shooter. He drives them from open grounds into greater security against various other enemies; and while those birds, which have been fostered and protected in the covetousness of the farmer, fall an easy prey to the snares and traps abounding on such farms, the others are suspicious of every thing, and will avoid the most ingenious devices laid to entrap them; and by reason of their seeking constant shelter in better cover, they more readily escape the vigilance of hawks.

Landholders are greatly mistaken, when they suppose that they afford sure protection to their Partridges by excluding Sportsmen from visiting their grounds. Many of these will tell you, that "they wish their birds preserved, and do not wish you to shoot them." And yet if you will visit the nooks and corners of their fields and thickets, you will find an abundance of traps and snares. Their prohibition does not, therefore, arise from any respect to the welfare of the birds, so much as to gratify their avaricious dispositions, by catching the birds themselves, and vending them in market. Their mode of catching these birds, too, is often attended with much cruelty. The writer has often, in his rambles, found traps and snoods, containing birds; and in several instances, when confined in the former, they appeared in a half-starved condition; and in the latter, the poor prisoners, half choked, had been dangling by the neck for days. But so long as avarice is the ruling principle of these men, it is all in vain to talk of preserving game on farms adjacent to any good market.

It is much to be regretted that the price of Partridges is so high. Fifty cents a pair can be readily obtained for them, at this time, in the Philadelphia market; and while such inducements are held out to covetous farmers and others to destroy Partridges, it is not to be wondered at, that Sportsmen should be forbidden to visit places where these birds are found. If farmers sincerely wish to have a due proportion of these truly interesting birds at all times on their plantations, let them first destroy all the snares and traps about them, and then drive *poachers*, or gunners, from their premises, especially during that period when the earth is covered with snow. The latter persons will oftentimes destroy an entire covey of Partridges at a single shot; and, if even two or three should escape the destructive fire, they will more than likely perish by the severity of the weather, for want of sufficient company to keep them warm at night, as it is known, by their manner of roosting, they impart equal warmth to each other. During the first snows of the season, I have known some reckless gunners to follow the trail of Partridges along hedge-rows, until the birds would huddle together in a space not eighteen inches in diameter, when, with a deadly fire, they would kill two-thirds of their number. And on one occasion, I knew a man, after he had thus succeeded in getting a covey huddled up, to fire on them, and on going up, finding one bird escaped, and thirteen dead, he expressed great dissatisfaction that he did not get the whole of them.

I think, then, it is by no means the interest of farmers to exclude Sportsmen from shooting on their grounds, if visited by them in moderation. A Sportsman may be known by his dogs, manner of hunting, and the seasons he appropriates to that amusement. No Sportsman will hunt in the snow, and all others gunning on Partridge grounds, at that time, should be driven off.

I have strictly observed, for some years, that *protected* grounds abound with fewer Partridges than those parts hunted over season after season by Sportsmen, and simply for the reason before stated, that their half-domesticity renders them an easy prey to their enemies. I have had my favourite districts, within a short distance to a day's ride of Philadelphia; over these I have hunted successfully every year for a number of years; and every succeeding season brought along with it the same plenitude of birds. Two spots, one within seven, and the other forty miles of this city, have been my favourites. These I have visited, the former nearly every week during the sporting season; and the latter, every day or two for several weeks at a time. On the first, (sometimes with a companion,) I have invariably bagged from fifteen to forty birds, and on one occasion sixty! Sixty Partridges, or fully four coveys, off of one district, in a single hunt; and yet the next season, the number of birds seemed undiminished. On the latter ground, I have even been more successful, from which I have never bagged less than twenty, and from that number up to forty-five birds; perhaps the general average would be twenty-five, and I seldom commenced my shooting season until the 15th of October. With this continued success, I have never found the number of birds less on the succeeding season, until the inclemency of the weather, a few winters ago, nearly depopulated all of the middle and northern states of Partridges.

I think most Sportsmen will agree with me in these ob-

servations. There is no doubt, that if they will consult their experience, they will find they have realized the truth of these leading points.

I will venture to assert, that if landholders, in some favourable portion of the country—say a considerable area in any cultivated part of New-Jersey, for instance—will make the experiment, and place the whole of their game under the protection of a given number of Sportsmen, the increase of birds will be much greater than by any other method. I would not destroy the traps and snares of the farmers' boys, but let them catch as many as they can. The Sportsman is to be unrestrained in regard to the number of days he wishes to hunt; but every other individual, with a gun, found trespassing, must be turned off of the privileged spot; and I feel confident, that *this district* would produce, every season, a greater number of Partridges than any other of the same magnitude throughout the state. D.

January 27, 1834.

THE SCOTCH DOCTOR AND THE JACKALLS.

Doctor S—— was on board a Company's ship lying at or near Diamond Harbour; and being short of amusement, and feeling the bump of *destructiveness* more strongly developed than usual on the surface of his pericranium, he took up his gun, and went on shore to lay wait for the Jackalls. In his walk along the beach he encountered the carcase of a dead buffalo—and, thinking himself sure of sport, lay down behind some bushes, and waited till the moon rose. Jackalls poured down from the woods by dozens, and began to pick the buffalo's bones. The Doctor cocked his percussion—and thought to himself, "The de'il my coveys!—boot I ha' thee noo!—here gooes for wha's the best mon, a Scot or a Jackall!" No sooner said than done,—the Doctor blazed away right and left, and through the cloud of his own smoke, dashed down the beach to bag his game! Alas! not a Jackall's brush was singed!—and, to the Doctor's consternation, instead of running away, the animals stood looking at him with much coolness; and though frightened by the report at first, they now began to collect round him, in great numbers, as if unwilling to be choused of their booty. Dr. S—— thought they might relish a bonny Scotsman more than a carrion buffalo, and fumbled for his ammunition. But, unlike a wise general, he had left his powder-flask under the bushes; and the gaunt bony forms of the Jackalls were now stealing down towards him from that quarter. "The de'il!—the de'ill!—but my retreat is cut ooff!" wailed the Doctor; "and the varmints look as if they would na mind a bit o' Christian flesh!"

Strange and almost unparalleled as the incident may appear—and I had it from the Doctor himself—the hungry Jackalls, when a cloud passed over the moon, began to encompass him around, and yelping and grinning with their long fangs, forced the Doctor to back as they advanced.

Dr. S—— brandished his firelock, and shouted, "Hoot awa! Hoot awa'!" with all his vigour; but the cunning animals seemed aware of his being out of powder, and as the buffalo lay at the edge of the water, they fairly drove him into the river up to his chin, shrieking, "Hoot awa!—hoot awa!—the de'il damn your mither's sons!"—and being unwilling to lose his powder-horn, and yet afraid to attack such a host of "hoongry beasts," he waited shivering in the limpid element for many hours, till the gray of morning induced his conquerors to retire.

Nothing annoys the Doctor so much as the question: "Which is the best mon, Doctor, a Scot or a Jackall?" I believe it was S——'s first and last sporting excursion.

He left off shooting on the wise principle of a celebrated tiger-shot, who having killed nine, and narrowly escaped being torn in pieces by the tenth, relinquished the sport for ever: and, when jeered for his timidity, he coldly replied, "Tiger-hunting is a delightful recreation while you hunt the *tiger*, but not quite so agreeable when the tiger takes it into his head to hunt *you*."

[*London Sport. Mag.*

THE HUMMING BIRD.

BY MRS. TURNER.

Say, feather'd gem, of rain-bow dyes,
With ruby breast and emerald wing,
Gay glittering in the sunny skies,
Like flitting flash of lightning.

Say—is that busy, busy hum,
Thy joyous song of love? or fear
Lest some rude rival bee, should come,
Thy favourite flowers too near?

Or canst thou from that tiny bill,
A silvery lay of sweetness pour,
The bosom of thy mate to thrill
With fairy lover's lore?

And can that little breast e'er beat
With passion's ardent glow?
Feel anger's stern, impetuous heat
Or love's fond fervour know?

Drawn on Stone by A. Rider.

Printed by Childs & Lehman

PRONG-HORNED ANTILOPE.

PRONG-HORNED ANTILOPE.

ANTILOPE AMERICANA.

[Plate V. Vol. 3.]

Antilope, Lewis & Clarke, i. 75, 208, 369; ii. 169.—*Antilope Americana*, Ord, Guthrie's Geography, Philad. ed. 1815.—*Antilope Furcifer*, Smith. Trans. of Linnæn Society, xiii. pl. 2.—*Prong-horned Antelope*, Sab. App. p. 667.—*Teuthlalmaçame*, Hernandez, Nov. His. p. 324, 325, Fig. 324, an. 1651.—*Le Squenoton*, Hist. de l'Amerique, p. 175, an. 1723.—*Antilocapra Americana*, Ord, Jour. de Phys. 1818. Harlan, Fauna, p. 250.—*Cervus Hamatus*, Blainville, Nouv. Bull. Societ. Phil. 1816, p. 80.—*Antilope Palmata*, Smith, Opere Citato. Desmarest, Mam. p. 476.—*Cervus Bifurcatus*, Rafinesque.—*Apeestat-Chækoos*, Cree Indians.—Philadelphia Museum.

The Prong-horned Antilope, was first discovered and described by Lewis and Clarke, while on their journey across the Rocky Mountains. Previous to this, it was unknown to naturalists, excepting only a slight notice given by Hernandez, of a similar animal, said to inhabit California, under the appellation of *Teuthlalmaçame*. The only preserved specimen of the animal, existing at present in this country, was brought by the above-mentioned gentlemen from the Missouri, and deposited in the Philadelphia Museum. To these, therefore, we are indebted for all the information we possess respecting this beautiful quadruped, which has since been confirmed by Dr. Richardson in his observations on the Northern Zoology, appended to Franklin's Journey to the Polar Sea.

In noticing the Prong-horned Antilope, Lewis & Clarke give the following facts:—

"Of all the animals we had seen, the Antilope seems to possess the most wonderful fleetness; shy and timorous, they generally repose only on the ridges, which command a view of all the approaches of an enemy. The acuteness of their sight distinguishes the most distant danger, the delicate sensibility of their smell defeats the precautions of concealment, and when alarmed their rapid career seems more like the flight of birds than the movements of an earthly being. After many unsuccessful attempts, Captain Lewis at last, by winding around the ridges, approached a party of seven, which were on an eminence, towards which the wind was unfortunately blowing. The only male of the party frequently encircled the summit of the hill, as if to announce any danger to the females, who formed a group at the top. Although they did not see Captain Lewis, the smell alarmed them, and they fled when he was at the distance of two hundred yards: he immediatuly ran to the spot where they had been, a ravine concealed them from him, but the next moment they appeared on a second ridge at the distance of three miles. He doubted whether it could be the same; but their number, and the extreme rapidity with which they continued their course, convinced him that they must have gone with a speed equal to that of the most distinguished race-horse.

"The chief game of the Shoshonees, is the Antilope, which when pursued retreats to the open plains, where the horses have full room for the chase. But such is its extraordinary fleetness and wind that a single horse has no possible chance of outrunning it, or tiring it down; and the hunters are therefore obliged to resort to stratagem. About twenty Indians, mounted on fine horses, and armed with bows and arrows, left the camp; in a short time they descried a herd of ten Antilopes; they immediately separated into little squads of two or three, and formed a scattered circle round the herd for five or six miles, keeping at a wary distance, so as not to alarm them till they were perfectly inclosed, and usually selecting some commanding eminence as a stand. Having gained their positions, a small party rode towards the herd, and with wonderful dexterity the huntsman preserved his seat, and the horse his footing, as he ran at full speed over the hills, and down the steep ravines, and along the borders of the precipices. They were soon outstripped by the Antilopes, which on gaining the other extremity of the circle, were driven back and pursued by the fresh hunters. They turned and flew, rather than ran in another direction; but they found new enemies. In this way they were alternately pursued backwards and forwards, till at length, notwithstanding the skill of the hunters, they all escaped, and the party, after running for two hours, returned without having caught any thing, and their horses foaming with sweat. This chase, the greater part of which was seen from the camp, formed a beautiful scene; but to the hunters is exceedingly laborious, and so unproductive, even when they are able to worry the animal down and shoot him, that forty or fifty hunters will sometimes be engaged for half a day without obtaining more than two or three Antilopes.

"The Antilope inhabits the great plains of the Columbia, and resembles those found on the banks of the Missouri, and indeed in every part of the untimbered country, but they are by no means so abundant on this as on the other side of the Rocky Mountains. The natives make themselves robes of their skins, and preserve the hair entire. In the summer and autumn, when the salmon begin to decline, the majority of the natives leave the sides of the

river, and reside in the open plains, to hunt the Antilope, which they pursue on horseback, and shoot with their arrows."

During the last expedition to the Rocky Mountains, under Major Long, the following incident occurred, which eminently displays the wonderful fleetness of the Antilope. "One afternoon, while the expedition halted, two soldiers, mounted on excellent horses, went out to hunt. After going some distance, they discovered, afar off, a female Antilope, feeding on the prairie. They immediately dismounted, and, after some ingenuity, succeeded in approaching sufficiently near to fire at and wound the animal, which fled at once. They then returned to their horses, remounted, and gave chase; but, on arriving at the spot where the animal had been wounded, they discovered its fawn, and as their object was diversion, they gave chase to the fawn in preference to the wounded mother. This they followed with the most rapid speed for upwards of two hours, before they succeeded in making it captive, and this was only effected, when by its exertions it sank exhausted on the ground, and had nearly worn out the horses and riders. The little prisoner was taken to the camp almost lifeless, but being fed on bread and milk, it was soon revived. The next day, as the expedition was moving forward, one of the party led it by his handkerchief; but to his surprise, instead of making any resistance, or attempts to escape, it kept pace with his footsteps, and evinced so much familiarity, that at length he concluded to untie it, and see if it would follow of its own accord. This it did for the greater part of the day, when it gave out, and was left behind, being no doubt greatly weakened by the exertions of the previous day." From this fact, it may be inferred, that the Antilope, if taken young, would, like the common deer, (*Cervus Virginianus,*) leave its kind, and abide in the habitations of man.

"The most northerly range of the Prong-horned Antilope," says Dr. Richardson, "is latitude 53°, on the banks of the north branch of the Saskatchewan. Some of them remain the whole year on the south branch of that river, but they are merely summer visitors to the north branch. They come every year to the neighbourhood of Carlton-house, when the snow has mostly gone; soon after their arrival the females drop their young, and they retire to the southwards again in the autumn as soon as the snow begins to fall. Almost every year a small herd linger on a piece of rising ground not far from Carlton-house, until the snow has become too deep on the plains to permit them to travel over them. Few or none of that herd, however, survive until the spring, as they are persecuted by the wolves during the whole winter. They are found in the summer season in the fifty-third parallel of latitude, from longitude 106° to the foot of the Rocky Mountains.

"The Prong-horned Antilope appears on the banks of the Saskachewan sometimes a solitary animal, sometimes assembled in herds of ten or twelve. Its sight and sense of smell are acute, and its speed is greater than that of any other inhabitant of the plains, although I have been informed by Mr. Prudens, who has resided forty years in that quarter, that when there is a little snow on the ground it may, with some little management, be run down by a high bred horse. The Indian hunters have no difficulty in bringing an Antilope within gun-shot, by various stratagems, such as lying down on their backs and kicking their heels in the air, holding up a white rag, or clothing themselves in a white shirt, and showing themselves only at intervals. By these and similar manœuvres, the curiosity of a herd of Antilopes is so much roused that they wheel round the object of their attention, and at length approach near enough to enable the hunter to make sure of his mark. From this disposition of the prong-horned Antilopes, they are more easily killed than any of the deer of the district which they inhabit. They are, however, objects of little interest to the Indians, who eat their flesh only when the bison, moose or wapiti are not to be procured, and their skins are of no value as an article of trade. The Mandans on the Missouri are said to capture them in pounds.

"This animal has a graceful form, a slender head, with large eyes, and long and delicate limbs. The *nostrils* turn obliquely upwards from the raphè of the upper lip, and are separated by a small, tumid, triangular, naked space. The naked margins of the *lips* are blackish, but the lips and chin are covered with white hair. The *nose* is nearly straight, or very slightly arched, narrow, and is clothed towards its tip with short hair of a liver-brown colour, which gradually mingles towards the fore-head with yellowish brown hair. The *orbits* have a narrow, blackish-brown margin, and the eye-lashes, composed of a row of stiff, erect hairs, are black. The *cheeks* are covered with short hair, mostly of a wood-brown colour, and the forehead is clothed with longer bushy hair, and presents two white marks, one extending from ear to ear, the other a little anterior to it; the latter mark is slightly tinged with brown. The *ears* are upwards of six inches high, narrow, and have the inner side curving in for half their height; from thence to their acute tips they are flat. They are covered posteriorly by a smooth coat of short hair, of a yellowish-brown colour, mixed with dark umber, the latter colour prevailing near the tip. They are lined interiorly with longer hair, of a grayish white colour. There is a dark blackish-brown spot

at the angle of each jaw, which exhales a strong hircine odour, and between this spot and the ear the hair is pale, or nearly white. There are no external indications whatever of a crumen or lachrymal opening. The *horns* are black, rise directly upwards and outwards, without any inclination either forwards or backwards, and curve sharply in towards each other at their tips. At the base the distance between them is 3½ inches; within 2 inches of the tip, where they begin to curve inwards, the distance between them is 10½ inches, and the tips are 7 inches apart. The horns are much compressed, in a lateral direction, to about half their height, where they give out a thin, triangular, or bracket-shaped process, which projects directly forwards for more than an inch. The surface of the lower half of the horns is striated, and is rough, with small warts and knobs, two or three of which project from a quarter to half an inch. The situation of these larger knobs varies in different specimens. The horns above the flat snag have a shining, striated surface, are nearly round, and taper considerably. The upper parts of the body are of a clear, yellowish-brown colour, deepening on the ridge of the back into blackish-gray. The hairs are much longer between the ears, and on the back of the neck, where they form an erect mane, of a blackish-brown colour on its tips. The sides and thighs are paler than the back, and approach in colour to a clear wood-brown. The under jaw has a very pale yellowish-brown colour, fading to white. The hair is bushy about the angle of the lower jaw, and has a wood-brown colour. This colour forms three belts across the throat, which differ from each other in breadth, and are separated by two patches of pure white. The chest, belly, insides of the thighs, and legs, the tail, and a large patch round it, which includes the rump, and upper part of the buttocks, are pure white. There is a pale yellowish mark at the root of the tail. The tail is 4½ inches long. The *legs* are slender, with long shank-bones; the fur, covering their anterior surfaces, is yellowish-brown. It has only two hoofs, there being no vestige of the posterior supplementary ones.

"The hair which clothes the body, resembles that of a moose or rein-deer in its structure. It is long, round, tapering from the root to the point, waved, and of a soft and brittle texture, particularly towards the root, where it is easily compressed, and does not regain its round form again. Its interior is white and spongy, like the pith of rush. When the hair makes its first appearance in the summer, it forms a smooth coat, and has the ordinary flexibility and appearance of hair; but as it lengthens it acquires the brittle, spongy texture, at its roots, and increasing at the same time in diameter, it becomes erect, and forms a very close coat. As the spring approaches the fine and flexible points are rubbed off, particularly on the sides, where the hair appears as if it had been clipped. The mane on the hind-head and neck retains its darker points, even when the winter coat is dropping off. The nose, cheeks, part of the lower jaw, ears, and legs, are clothed at all times with short flexible hairs, which lie smoothly.

"The *females* are stated, by some American writers, to have horns like the males, although smaller; but in gravid, and, therefore, at least nearly full-grown individuals, which I have examined, there was merely a short, obtuse process, of the frontal bone, scarcely to be felt through the fur, and not covered with horn.

"The *young*, at birth, are covered on the upper parts with short hair of a clove-brown colour, more or less hoary. The situation of the mane is marked by a dark line. The tail is yellowish-brown, and the buttocks are pure white. The dark mark on the nose, the one behind the angle of the jaw, and the bands across the throat, exist as in the adult. The legs are of a pure wood-brown colour.

DIMENSIONS.

	Feet.	Inches.
Length from the nose to the root of the tail,	4	4
Height at the fore shoulder,	3	0
" " haunches,	3	0
Girth behind the four legs,	3	0
" before the hind legs,	2	10
Length of the tail, with the hair,	0	4½

MIGRATION OF MAMMIFEROUS QUADRUPEDS.

ALTHOUGH in speculating on "philosophical possibilities," said Buffon, the same temperature might have been expected, all other circumstances being equal, to produce the same beings in different parts of the globe, both in the animal and vegetable kingdoms, yet it is an undoubted fact, that when America was discovered, its indigenous quadrupeds were all dissimilar from those previously known in the old world. The elephant, the rhinoceros, the hippopotamus, the cameleopard, the camel, the dromedary, the buffalo, the horse, the ass, the lion, the tiger, the apes, the baboons, and a number of other mammalia, were nowhere to be met with on the new continent; while in the old, the American species, of the same great class, were nowhere to be seen—the tapir, the lama, the pecari, the jaguar, the couguar, the agouti, the paca, the coati, and the sloth.

These phenomena, although few in number relatively to the whole animate creation, were so striking and so positive in their nature, that the French naturalist caught sight at once of a general law in the geographical distribution of organic beings, namely, the limitation of groups of distinct species to regions separated from the rest of the globe by certain natural barriers. It was, therefore, in a truly philosophical spirit, that relying on the clearness of the evidence obtained respecting the larger quadrupeds, he ventured to call in question the identifications announced by some contemporary naturalists, of species of animals said to be common to the southern extremities of America and Africa.

The migration of quadrupeds from one part of the globe to the other, observes one of our ablest writers, is prevented by uncongenial climates, and the branches of the ocean which intersect continents. "Hence, by a reference to the geographical site of countries, we may divide the earth into a certain number of regions fitted to become the abodes of particular groups of animals, and we shall find, on inquiry, that each of these provinces, thus conjecturally marked out, is actually inhabited by a distinct nation of quadrupeds."

Where the continents of the old and new world approximate to each other towards the north, the narrow straits which separate them are frozen over in winter, and the distance is further lessened by intervening islands. Thus a passage from one continent to another becomes practicable to such quadrupeds as are fitted to endure the intense cold of the arctic circle. Accordingly, the whole arctic region has become one of the provinces of the animal kingdom, and contains many species common to both the great continents. But the temperate regions of America, which are separated by a wide extent of ocean from those of Europe and Asia, contain each a distinct nation of indigenous quadrupeds. There are three groups of *tropical* mammalia, belonging severally to America, Africa, and continental India, each inhabiting lands separated from each other by the ocean.

In Peru and Chili, says Humboldt, the region of the grasses, which is at an elevation of from twelve thousand three hundred to fifteen thousand four hundred feet, is inhabited by crowds of lama, guanaco, and alpaca. These quadrupeds, which here represent the genus camel of the ancient continent, have not extended themselves either to Brazil or Mexico, because, during their journey, they must necessarily have descended into regions that were too hot for them.

New Holland is well known to contain a most singular and characteristic assemblage of mammiferous animals, consisting of more than forty species of the marsupial family, of which no congeners even occur elsewhere, with the exception of a few American opossums. This exclusive occupation of the Australian continent by the kangaroos and other tribes of pouched animals, although it has justly excited great attention, is a fact, nevertheless, in strict accordance with the general laws of the distribution of species; since, in other parts of the globe, we find peculiarities of form, structure, and habit, in birds, reptiles, insects, or plants, confined entirely to one hemisphere, or one continent, and sometimes to much narrower limits.

The southern region of Africa, where that continent extends into the temperate zone, constitutes another separate zoological province, surrounded as it is on three sides by the ocean, and cut off from the countries of milder climate, in the northern hemisphere, by the intervening torrid zone. In many instances, this region contains the same genera which are found in temperate climates to the northward of the line; but then the southern are different from the northern species. Thus in the south we find the quagga and the zebra; in the north, the horse, the ass, and the jiggetai of Asia.

The south of Africa is spread out into fine level plains from the tropic to the Cape; in this region, says Pennant, besides the horse genus, of which five species have been found, there are also peculiar species of rhinoceros, the hog, and the hyrax, among pachydermatous races; and amongst the ruminating the giraffe, the Cape buffalo, and a variety of remarkable antelopes, as the springbok, the oryx, the gnou, the leucophoë, the pygarga, and several others.

The Indian archipelago presents peculiar phenomena in regard to its indigenous mammalia, which, in their generic character, recede in some respects from that of the animals of the Indian continent, and approximate to the African. The Sunda isles contain a hippopotamus, which is wanting in the rivers of Asia; Sumatra, a peculiar species of tapir, and a rhinoceros resembling the African more than the Indian species, but specifically distinguishable from both.

Beyond the Indian archipelago, is an extensive region, including New Guinea, New Britain, and New Ireland, together with the archipelago of Solomon's Islands, the New Hebrides, and Louisiade, and the more remote groups of isles in the great southern ocean, which may be considered as forming one zoological province. Although these remarkable countries are extremely fertile in their vegetable productions, they are almost wholly destitute of native warm-blooded quadrupeds, except a few species of bats, and some domesticated animals in the possession of the natives.

Quadrupeds found on islands situated near the conti-

nents, generally form a part of the stock of animals belonging to the adjacent main land; "but small islands remote from continents are in general altogether destitute of land quadrupeds, except such as appear to have been conveyed to them by men. Kerguelen's Land, Juan Fernandez, the Gallapagos, and the Isles de Lobos, are examples of this fact. Among all the groups of fertile islands in the Pacific Ocean, no quadrupeds have been found, except dogs, hogs, rats, and a few bats. The bats have been found in New Zealand and the more westerly groups; they may probably have made their way along the chain of islands which extend from the shores of New Guinea far into the southern Pacific. The hogs and the dogs appear to have been conveyed by the natives from New Guinea. The Indian Isles, near New Guinea, abound in oxen, buffaloes, goats, deer, hogs, dogs, cats, and rats; but none of them are said to have reached New Guinea, except the hog and the dog. The New Guinea hog is of the Chinese variety, and was probably brought from some of the neighbouring isles, being the animal most in request among savages. It has run wild in New Guinea. Thence it has been conveyed to the New Hebrides, the Tonga and Society Isles, and to the Marquesas; but it is still wanting in the more eastern islands, and, to the southward, in New Caledonia.

"Dogs may be traced from New Guinea to the New Hebrides and Fijii Isles; but they are wanting in the Tonga Isles, though found among the Society and Sandwich islanders, by some of whom they are used for food: to the southward they have been conveyed to New Caledonia and New Zealand. In Easter Island, the most remotely situated in this ocean, there are no domestic animals except fowls and rats, which are eaten by the natives: these animals are found in most of the islands; the fowls are probably from New Guinea. Rats are to be found even on some desert islands, whither they may have been conveyed by canoes which have occasionally approached the shores. It is known, also, that rats occasionally swim in large numbers to considerable distances.

It is natural to suppose that the geographical range of the different species of cetacea should be less correctly ascertained than that of the terrestrial mammifers. It is, however, well known, that the whales which are obtained by our fishers in the South Seas, are distinct from those of the North; and the same dissimilarity has been found in all the other marine animals of the same class, so far as they have yet been studied by naturalists.

Let us now inquire what facilities the various land quadrupeds enjoy of spreading themselves over the surface of the earth. In the first place, as their numbers multiply, all of them, whether they feed on plants, or prey on other animals, are disposed to scatter themselves gradually over as wide an area as is accessible to them. But before they have extended their migrations over a large space, they are usually arrested, either by the sea, or a zone of uncongenial climate, or some lofty and unbroken chain of mountains, or a tract already occupied by a hostile and more powerful species.

Rivers and narrow friths can seldom interfere with their progress, for the greater part of them swim well, and few are without this power when urged by danger and pressing want. Thus, amongst beasts of prey, the tiger is seen swimming about among the islands and creeks in the delta of the Ganges, and the jaguar traverses with ease the largest streams in South America. The bear, also, and the bison, stem the current of the Mississippi. The popular error, that the common swine cannot escape by swimming when thrown into the water, has been contradicted by several curious and well-authenticated instances during the recent floods in Scotland. One pig, only six months old, after having been carried down from Garmouth to the bar at the mouth of the Spey, a distance of a quarter of a mile, swam four miles eastward to Port Gordon, and landed safe. Three others, of the same age and litter, swam at the same time five miles to the west, and landed at Blackhill.

In an adult and wild state, these animals would doubtless have been more strong and active, and might, when hard pressed, have performed a much longer voyage. Hence, islands remote from the continent may obtain inhabitants by casualties which, like the late storms in Morayshire, may only occur once in many centuries, or thousands of years, under all the same circumstances. It is obvious that powerful tides, winds, and currents, may sometimes carry along quadrupeds capable, in like manner, of preserving themselves for hours in the sea to very considerable distances, and in this way, perhaps, the tapir, (*Tapir Indicus,*) may have become common to Sumatra and the Malayan peninsula.

To the elephant in particular, the power of crossing rivers is essential in a wild state, for the quantity of food which a herd of these animals consumes renders it necessary that they should be constantly moving from place to place. The elephant crosses the stream in two ways. If the bed of the river be hard, and the water not of too great a depth, he fords it. But when he crosses great rivers, such as the Ganges and the Niger, the elephant swims deep, so deep that the end of his trunk only is out of the water; for it is a matter of indifference to him, whether his body be completely immersed, provided he can bring the tip of his trunk to the surface, so as to breathe the external air.

Animals of the deer kind frequently take to the water, especially in the rutting season, when the stags are seen swimming for several leagues at a time, from island to island, in search of the does, especially in the Canadian lakes; and in some countries where there are islands near the sea-shore, they fearlessly enter the sea, and swim to them. In hunting excursions, in North America, the elk of that country is frequently pursued for great distances through the water.

The large herbiverous animals, which are gregarious, can never remain long in a confined region, as they consume so much vegetable food. The immense herds of bisons which often, in the great valley of the Mississippi, blacken the surface near the banks of that river and its tributaries, are continually shifting their quarters, followed by wolves which prowl about in their rear. "It is no exaggeration," says Mr. James, "to assert, that in one place, on the banks of the Platte, at least ten thousand bisons burst on our sight in an instant. In the morning, we again sought the living picture, but upon all the plain, which last evening was so teeming with noble animals, not one remained."

Besides the disposition common to the individuals of every species slowly to extend their range in search of food, in proportion as their numbers augment, a migratory instinct often developes itself in an extraordinary manner, when, after an unusually prolific season, or upon a sudden scarcity of provisions, great multitudes are threatened by famine. We shall enumerate several illustrations of these migrations, because they may put us upon our guard against attributing a high antiquity to a particular species, merely because it is diffused over a great space; they show clearly how soon, in a state of nature, a newly-created species might spread itself, in every direction, from a single point.

In very severe winters, great numbers of the black bears of America migrate from Canada into the United States; but in milder seasons, when they have been well fed, they remain and hybernate in the north. The reindeer, which in Scandinavia can scarcely exist to the south of the sixty-fifth parallel, descends, in consequence of the greater coldness of the climate, to the fiftieth degree, in Chinese Tartary, and often roves into a country of more southern latitude than any part of England.

In Lapland, and other high latitudes, the common squirrels, whenever they are compelled, by want of provisions, to quit their usual abodes, migrate in amazing numbers, and travel directly forwards, allowing neither rocks, forests, nor the broadest waters, to turn them from their course. Great numbers are often drowned in attempting to pass friths and rivers. In like manner, the small Norway rat sometimes pursues its migrations in a straight line across rivers and lakes; and Pennant informs us, that when, in Kamtschatka, the rats become too numerous, they gather together in the spring, and proceed in great bodies westward, swimming over rivers, lakes, and arms of the sea. Many are drowned or destroyed by water-fowl or fish. As soon as they have crossed the river Penchim, at the head of the gulf of the same name, they turn southward, and reach the rivers Judoma and Ochot by the middle of July, a district surprisingly distant from their point of departure.

The lemings, also of Scandinavia, often pour down in myriads from the northern mountains, and devastate the country. They generally move in lines which are about three feet from each other, and exactly parallel, and they direct their march from the north-west to the south-east, going directly forward through rivers and lakes, and when they meet with stacks of hay or corn, gnawing their way through them instead of passing round.

Vast troops of the wild ass, or *onager* of the ancients, which inhabit the mountainous deserts of Great Tartary, feed, during the summer, in the tracts east and north of Lake Aral. In the autumn they collect in herds of hundreds and even thousands, and direct their course towards the north of India, and often to Persia, to enjoy a warm retreat during winter. Bands of two or three hundred quaggas, a species of wild ass, are sometimes seen to migrate from the tropical plains of southern Africa to the vicinity of the Malaleveen river. During their migrations they are followed by lions, who slaughter them night by night.

The migratory swarms of the springbok, or Cape antelope, afford another illustration of the rapidity with which a species, under certain circumstances, may be diffused over a continent. When the stagnant pools of the immense deserts south of the Orange river dry up, which often happens after intervals of three or four years, myriads of these animals desert the parched soil, and pour down like a deluge on the cultivated regions nearer the Cape. The havoc committed by them resembles that of the African locusts; and so crowded are the herds, that "the lion has been seen to walk in the midst of the compressed phalanx with only as much room between him and his victims as the fears of those immediately around could procure by pressing outwards."

Dr. Horsfield mentions a singular fact in regard to the geographical distribution of the Mydaus meliceps, a kind of polecat inhabiting Java. This animal is confined exclusively to those mountains which have an elevation of more than seven thousand feet above the level of the ocean: on these it occurs with the same regularity as many

plants. The long-extended surface of Java, abounding with conical points which exceed this elevation, affords many places favourable for its resort. On ascending these mountains, the traveller scarcely fails to meet with this animal, which, from its peculiarities, is universally known to the inhabitants of these elevated tracts, while to those of the plains it is as strange as an animal from a foreign country. In my visits to the mountainous districts, I uniformly met with it, and, as far as the information of the natives can be relied on, it is found on all the mountains."

Now, if we were asked to conjecture how the Mydaus arrived at the elevated regions of each of these isolated mountains, we should say that before the isle was peopled by man, by whom their numbers are now thinned, they may occasionally have multiplied so as to be forced to collect together and migrate; in which case, notwithstanding the slowness of their motions, some few would succeed in reaching another mountain, some twenty, or even, perhaps, fifty miles distant: for although the climate of the hot intervening plains would be unfavourable to them, they might support it for a time, and would find there abundance of insects on which they feed. Volcanic eruptions, which at different times have covered the summits of some of these lofty cones with sterile sand and ashes, may have occasionally contributed to force on these migrations.

[*Lyell's Geology.*

CAVE OF GUACHARO, NEAR CUMANA.

The greatest curiosity in this beautiful and salubrious district is a cavern inhabited by nocturnal birds, the fat of which is employed in the missions for dressing food. It is named the Cave of Guacharo, and is situated in a valley three leagues distant from the convent.

On the 18th of September our travellers, accompanied by most of the monks and some of the Indians, set out for this aviary, following for an hour and a half a narrow path, leading across a fine plain covered with beautiful turf; then, turning westward along a small river which issues from the cave, they proceeded during three-quarters of an hour, sometimes walking in the water, sometimes on a slippery and miry soil, between the torrent and a wall of rocks, until they arrived at the foot of the lofty mountain of Guacharo. Here the torrent ran in a deep ravine, and they went on under a projecting cliff, which prevented them from seeing the sky, until at the last turning they came suddenly upon the immense opening of the recess, which is eighty-five feet broad and seventy-seven feet high. The entrance is towards the south, and is formed in the vertical face of a rock, covered with trees of gigantic height, intermixed with numerous species of singular and beautiful plants, some of which hang in festoons over the vault. This luxuriant vegetation is not confined to the exterior of the cave, but appears even in the vestibule, where the travellers were astonished to see heliconias nineteen feet in height, palms, and arborescent arums. They had advanced about four hundred and sixty feet before it became necessary to light their torches, when they heard from afar the hoarse screams of the birds.

The Guacharo is the size of a domestic fowl, and has somewhat the appearance of a vulture, with a mouth like that of a goatsucker. It forms a distant genus in the order *Passeres*, differing from that just named in having a stronger beak, furnished with two denticulations, though in its manners it bears an affinity to it as well as to the alpine crow. Its plumage is dark bluish-gray, minutely streaked and spotted with deep brown; the head, wings, and tail being marked with white spots bordered with black. The extent of the wings is three feet and a half. It lives on fruits, but quits the cave only in the evening. The shrill and piercing cries of these birds, assembled in multitudes, are said to form a harsh and disagreeable noise, somewhat resembling that of a rookery. The nests, which the guides showed by means of torches fastened to a long pole, were placed in funnel-shaped holes in the roof. The noise increased as they advanced, the animals being frightened by the numerous lights.

About midsummer every year the Indians, armed with poles, enter the cave, and destroy the greater part of the nests. Several thousands of young birds are thus killed, and the old ones hover around, uttering frightful cries. Those which are secured in this manner are opened on the spot, to obtain the fat which exists abundantly in their abdomen, and which is subsequently melted in clay vessels over fires of brushwood. This substance is semifluid, transparent, destitute of smell, and keeps above a year without becoming rancid. At the convent of Caripe it was used in the kitchen of the monks, and our travellers never found that it communicated any disagreeable smell or taste to the food.

The Guacharoes would have been long ago destroyed, had not the superstitious dread of the Indians prevented them from penetrating far into the cavern. It also appears, that birds of the same species dwell in other inaccessible places in the neighbourhood, and that the great cave is repeopled by colonies from them. The hard and dry fruits which are found in the crops and gizzards of the young ones are considered as an excellent remedy against inter-

mittent fevers, and regularly sent to Cariaco and other parts of the lower districts where such diseases prevail.

The travellers followed the banks of the small river which issues from the cavern as far as the mounds of calcareous incrustations permitted them, and afterward descended into its bed. The cave preserved the same direction, breadth, and height as at its entrance, to the distance of 1554 feet. The natives having a belief that the souls of their ancestors inhabit its deep recesses, the Indians who accompanied our travellers could hardly be persuaded to venture into it. Shooting at random in the dark, they obtained two specimens of the Guacharo. Having proceeded to a certain distance, they came to a mass of stalactite, beyond which the cave became narrower, although it retained its original direction. Here the rivulet had deposited a blackish mould resembling that observed at Muggendorf in Franconia. The seeds which the birds carry to their young spring up wherever they are dropped into it; and M. Humboldt and his friend were astonished to find blanched stalks that had attained a height of two feet.

As the missionaries were unable to persuade the Indians to advance farther, the party returned. The river, sparkling amid the foliage of the trees, seemed like a distant picture, to which the mouth of the cave formed a frame. Having sat down at the entrance to enjoy a little needful repose, they partook of a repast which the missionaries had prepared, and in due time returned to the convent.

[*Humboldt.*

NOTES OF A NATURALIST.

BY JACOB GREEN, M. D.

PROFESSOR OF CHEMISTRY IN JEFFERSON COLLEGE.

Our Village—The Blue-bird.

Every one who rambles through our fields and woods during the spring, summer, or autumn, must be familiar with the plaintive song, the gentle manners, and the peaceful disposition of our own little Blue-bird, called by modern ornithologists the *Sylvia Sialis.* Some how or other I have, from early youth, entertained an attachment for this little songster, which all the gayer and more expert musicians of the grove, cannot rival. Though his plumage is simple, and his warblings brief, and perhaps to some ears monotonous, he has always maintained with me the pre-eminence. I always anxiously wait for his arrival, and listen with delight to his first mild and oft repeated chirpings, towards the end of February, knowing that spring's "ethereal mildness" is at hand. During the summer he animates the woods and hedges with his most cheerful song, though it is frequently lost in the general chorus; but, in the autumn, the meadow and the grove would be unharmonious but for his plaintive notes. Often in the bright sunny mornings of this variable season of our year, when all his companions in the feathered choir have departed to milder climates, he may be noticed perched on a fence rail, or on the branches of the leafless hedge,—then springing into the air at your approach, he pipes his final autumnal farewell. Nothing can be more graphic than Wilson's account of this interesting bird. He observes that "in his motions and general character, he has great resemblance to the Robin Red-breast of Britain; like him he is known to almost every child, and shows as much confidence in man by associating with him in summer, as the other by his familiarity in winter." I have heard and have been pleased with the notes of the English Robin in his native haunts, and perhaps many would prefer them to those of our Blue-bird; but if what is told of his insidious and pilfering disposition be true, I cannot consent to make him a companion of my little favourite. The author of "The Journal of a Naturalist," associates the Robin, (*Motacilla rubecola,*) with the Bull-finch and other plunderers of the English garden, in company, where, he remarks, it would not generally be sought; "but sad truths must be told of it. It might be called pugnacious, jealous, selfish, quarrelsome, did I not respect ancient feelings and long-established sentiments. A favourite by commiseration, it seeks an asylum with us; by supplication and importunity it becomes a partaker of our bounty in a season of severity and want,—and its seeming humbleness and necessities obtain our pity; but it slights and forgets our kindness the moment it can provide for itself, and is away to its woods and its shades." Now, our bird is proverbially peaceful in his manners, useful in his habits, confident and familiar in his disposition, and when with open quivering wings, he pours forth his sweetest melody, I think, is unrivalled in his song. The Robin Red-breast of England has furnished a theme for some of her most gifted poets, and for many of her nursery songs. I shall never lose the impressions made upon my youthful mind when hearing the words and the music of the little ballad called "The Wood Robin." But no pastoral muse has yet arisẽn in this western woody world to do justice to the name of the Blue-bird, and to endear him still more, as Wilson continues to remark, by the tenderness of verse. A few lines are then offered as a tribute to our little songster, by the gifted biographer of American birds; and, as a

feeble acknowledgment of a similar kind, I must insert the following stanzas.

THE APPEARANCE OF THE BLUE-BIRD.

What sounds now fill the wintry air,
What music floats upon the breeze,
Whilst all the fields are bleak and bare,
And verdure breaks not from the trees?

Oh! 'tis the bird with plumage blue,
The herald of approaching spring,
Still to his native forests true,
The echoing woods his welcome ring.

No opening violet's perfume
Now scents for thee the chilly air,
No lone anemonies in bloom
A downy couch for thee prepare.

But yet I hail thee, beauteous bird,
For soon will come the time of flowers,
When thousand warblers will be heard,
Filling with song the budding bowers.

Say, what impelled thy venturous wings
To bear thee here from southern skies,
Where never-ceasing verdure springs,
And ever-blooming flowerets rise?

Oh, it was that same tireless arm
Which holds the sun—guides every sphere,
That Power whose influences warm
To life and light the opening year!

Yes—it was that same kindly hand,
Which marked thy path through trackless air,
And bid thee to this distant land,
Thy native home,—in haste repair!

Thrice welcome to those wonted haunts!
Endeared to thee by love and song,
Where erst I've listened to thy chaunts,
Speeding the gladsome hours along.

—

THE DEPARTURE OF THE BLUE-BIRD.

I hailed thee first among the throng
Of warblers in the feathered choir;
Then tune for me a parting song,
And thus to milder climes retire.

Where are thy gay companions now,
That filled with music every dell?
All lonely on the leafless bough,
Thy plaintive voice proclaims farewell.

Farewell!—and haste to other lands—
Which brighter, kindlier suns illume—
Where rosy Flora's liberal hands
Scatter around perennial bloom!

Haste, haste away!—nor linger here;
The forest leaves are falling fast,
The frowns of Winter now appear,
And soon will come the icy blast!

No chill December knowest thou,
Thy year is filled with sun and song;
Then fare thee well, and leave me now,
For frost and storms to me belong.

But should the Spring for me, once more
Return, and breathe her rich perfume,
Revisit, then, thy native shore,
Thy plaintive song again resume.

Though the Blue-bird is occasionally seen in many of our northern states, during the warm and sunny days which almost always occur in our winters, the great body of them migrate to the more genial regions of the south. My own little experience corresponds with that of Mr. Wilson. I have seen them in the beginning of the autumn, passing high over head, from the north; little groups of them descending from great altitudes, and settling on the tops of the leafless trees. After pausing there for a few minutes, as if resting from a weary journey, they would again reascend high in the air, and speed away towards the south. It seems to be proved that their winter retreat is in Jamaica, Cuba, the Bahamas, and other neighbouring regions.

The whole subject of migration is exceedingly curious and perplexing. One can easily comprehend why some birds should pass from a colder to a milder climate; the greater abundance of food, and the facilities for rearing their young, might account for it. But why our little Blue-bird, with many other of its migratory companions, should leave the mild regions where they have passed the winter, where an abundant supply of insects and other food is no doubt always to be procured, and subject themselves to a long, fatiguing, and perilous journey to revisit our apparently less congenial climate, I have never been able to assign any adequate cause, except imperious instinct, or rather the influence of that great Power which I have noticed in my stanzas. One of the sacred writers has said all that can be said on this subject:—"The stork in the heavens knoweth her appointed times; and the turtle and the crane, and the swallow, observe the time of their coming." (*Jer.* viii. 7.) Pope's beautiful lines, in allusion to the migration of the stork, deserve to be often quoted.

Who bid the stork, Columbus-like explore,
Heavens not its own, and worlds unknown before?
Who calls the council, states the certain day,
Who forms the phalanx, and who points the way?

A Fossil Plant.

I have already noticed that our village stands on the precipitous slope of a very lofty hill, at the foot of which our sluggish creek pursues a circuitous course towards the Ohio river. In its way, this stream fertilizes some rich but not very extensive meadow land. A few miles to the north-west of the town there is quite an extensive patch of low ground, not far from the creek. One of the farmers, a short time since, on this tract, discovered, while ploughing, a curious stone, carved in a very strange manner, as he supposed, by the old Indians. Expressing a great desire to see it, being at the time occupied with the Indian antiquities of the west, he brought me, in a few days, the carved stone. I instantly perceived that the figures upon it were not the work of human hands, but were the impressions of vegetable reliquiæ. This fossil vegetable impression is in sand stone, and in the beauty and regularity of its configurations, is not very unlike some of the ornaments of ancient architecture. It is no doubt the remains of a vascular cryptrogamic plant, and belongs to the genus lepidodendron, or lycopodium. These gigantic reliques of ancient vegetation are very abundant in the sand stone of the valley of the Mississippi, which accompanies the coal, and are thought by geologists to be coeval with the consolidation of our coal strata. I have seen a large number of these fossils, many of which were of an enormous size. Most of these stupendous fossil stems are not circular, like our present race of plants, but are of an ovate form, as if they had been compressed during the process of petrifaction. How these stems are flattened by the pressure of the superincumbent weight, I think has not yet been satisfactorily explained. But I will not at this time enumerate the objections which occur. Other difficulties, with regard to settling the species, have lately been presented by Mr. Lukis, an able physiological botanist, and which have deterred me from giving a specific name to the fossil plant found in our neighbourhood. That gentleman has ascertained, by a series of observations, made on the drying and shrivelling of certain succulent plants, most analogous to fossil species, that a great variety of patterns or configurations may be produced, in a single individual, during the process of its drying and decomposition. If, therefore, fossil plants have undergone similar changes before or in the process of mineralization, it is evident that the same species will often appear under different aspects. It was before remarked by Mr. Steinhauer, speaking of the *epidermal, cortical,* and *ligneous* appearance of the *Phytolithus cancellatus,* that the first or epidermal configuration is formed of rhombs, giving it a net-work appearance; that the cortical figure differed essentially from this, and that in its ligneous aspect the rhombs were entirely lost.

Our Springs.

Our village, and its vicinity, abounds with springs of water. In a country where salt and coal are so frequent, a great variety of what are called mineral springs might be expected to exist. It is well known that the ingredients found in mineral waters, are commonly derived from the soil, or owe their properties to the rocks through which they flow; the water, by dissolving the soluble salts which it meets with in its passage, thus frequently acquires peculiar and highly important characters. There is no spring yet discovered in our neighbourhood, which can be distinguished for its great medical virtues. The most remarkable is, perhaps, a copious fountain of sulphurous water, near the bank of the creek, about half a mile west of the town. The well from which it is procured, is excavated in a shaley lime-stone rock, in the strata of which thin seams of bituminous coal are visible. The presence of sulphuretted hydrogen is readily noticed by its odour, as the water is pumped from the well; a few drops of the acetate of lead also indicated the same gas. A piece of silver was covered with a film of the sulphuret, when left for a short time in a tumbler of the water. Iron was ascertained to be an ingredient by the juice of the oak leaf. With the oxalic acid, and with the nitrate of silver, I obtained but slight precipitates, and therefore conclude that the water contains little lime, and but a trace of some muriatic salt. Sulphur and iron are no doubt the principal solid ingredients contained in this spring. It has been thought beneficial in slight cutaneous diseases, but except as a means of cleanliness, it probably possesses no very important properties as a discutant. Most of our religious societies among the scattered population of the *great west*, have their houses of worship in the woods, an artificial well, or a natural spring of water being always at hand, for the use of the people during the intervals of their public services. The well just noticed is one of this description. As the mouth of it is uncovered, and the water used but sparingly except once a week, it is commonly of a black colour, owing no doubt to the leaves of the forest falling into the well, and forming, with the iron, a kind of ink, or in chemical language, a gallate of iron.

All the springs and wells in our village contain large quantities of lime-stone, which is precipitated when the water is boiled, the free carbonic acid which is always present, and by which it is dissolved, being expelled by the heat. In some neighbouring towns, where the steam

engine is used in factories, the lime-stone water is very troublesome, for their boilers are soon clogged by masses of the carbonate of lime precipitating in them. The temperature of the well water in the village varies from 50° to 56° of Fahrenheit's thermometer. The coldest spring is just under my study window; but unfortunately it is highly charged with the lime-stone, and is thus rendered very unpleasant to me as a drink. Persons, however, brought up in these lime-stone regions become very fond of the water, and even complain when they are obliged to use a purer liquid found in other districts. It has been thought by many, that those horrid tumors, called *goitres*, which are so common among the peasantry of Switzerland, are occasioned by the calcareous matter in the water which they drink. I have never seen a case of this malady with us, but I have been informed that instances of it have been noticed; particularly when the country was first settled.

Curious Instinct of the Common Hog.—(Sus Scrofa—Lin.)

It is customary with farmers who reside in the thinly settled tracts of the United States, to suffer their hogs to run at large. These animals feed upon acorns, which are very abundant in our extensive forests, and in this situation they often become wild and ferocious. A gentleman of my acquaintance, while travelling some years ago, through our unfrequented district, perceived at a little distance before him a herd of swine, and his attention was arrested by the agitation they exhibited. He quickly perceived a number of young pigs in the centre of the herd, and that the hogs were arranged about them in a conical figure, having their heads all turned outwards. At the apex of this singular cone, a huge boar had placed himself, who, from his size, seemed to be the master of the herd. The traveller now observed that a famished wolf was attempting by various manœuvres to seize one of the pigs in the middle; but wherever he made an attack, the huge boar at the apex of the cone presented himself—the hogs dexterously arranging themselves on each side of him, so as to preserve the position of defence just mentioned. The attention of the traveller was for a moment withdrawn, and, upon turning to view the combatants, he was surprised to find the herd of swine dispersed, and the wolf no longer to be seen. On riding up to the spot, the wolf was discovered dead on the ground, a rent being made in his side, more than a foot in length—the boar having, no doubt, seized a favourable opportunity, and with a sudden plunge despatched his adversary with his formidable tusks.

It is a little remarkable that the ancient Romans, among the various methods they devised for drawing up their armies in battle, had one exactly resembling the position assumed by the swine above mentioned. This mode of attack they called the *Cuneus*, or *Caput porcinum*.

Blue-Yellow Bird.—(Fringilla tristis.)

To those but little acquainted with Natural History, the assertion that a white black-bird, (oriolus Phœniceus,) and a black swan, (Anas Atrata) are animals really in existence, appears too paradoxical for belief. Black swans, however, are found in New-Holland and some other places, possessing all the graceful attitudes of the European species; and white black-birds, or albinos, are of no very uncommon occurrence.

I have observed another anomaly among the feathered tribes no less striking. A bird of precisely the same size, habits, and general appearance as our common Yellow-bird, (Fringilla tristis,) associating with it, and differing only in colour; this bird was of a dark indigo in the places where the male (F. tristis) is yellow; the black bands on the wings, and the spot on the head, were the same in both.

The following hints are offered by way of theory to explain these anomalies:—

If there be any truth in the opinion entertained by many, that the imagination of the parent, or that certain casualties during gestation, have an influence on the offspring of the class *Mamalia*—why may not the like circumstances affect the embryo in the egg of birds? Again, we know that when the eye becomes fatigued with beholding the glare of one colour, it is relieved by changing the colour; or if a colour be viewed for some time, the opposite will be painted on the retina. Thus when we look on the bright light thrown by a burning-glass on any object, a black spot is produced in the eye; and if we look steadfastly on a black spot made with ink on a white sheet of paper, on moving the eye a little, a luminous spot will be seen on the paper, much brighter than the surrounding part.* Will not these two particulars, taken together, account for the above anomalies?

The causes which have produced the varieties in the human species, are but little understood. Too much is perhaps attributed to the influence of climate. There are many reasons to satisfy an unprejudiced mind, besides the unerring testimony of the Bible, that the whole race of man has sprung from one and the same stock. The five principal varieties mentioned by Blumenbach, the Cauca-

* If we gaze long upon a bright yellow spot, a blue colour will be painted on the retina. Many curious particulars on this subject may be found in the first volume of Darwin's Zoonomia.

sian, Mongolian, Ethiopian, American, and Malayan, may all have arisen from some such accidental causes as those noticed above, or such as occasion the albinos of our species. That species can be continued from such accidental varieties, appears from the following account published in Edwards' Gleanings of Natural History, and in the 424th No. of the Philosophical Transactions. Edward Lambert, or the Porcupine man, was at his birth like other children; but in eight or nine weeks his skin turned yellow, and then blackish, covered with conical protuberances, which formed a rugged covering all over him, except his head, palms, and the soles of his feet. This man had six children, whose skin exactly resembled his own. Edwards then remarks—"It appears to me beyond all doubt, that a race of people may be propagated by this man, having such rugged coats or covering as himself, which if it should ever happen, and the accidental original be forgotten, it is not improbable they may be deemed a different species of mankind; which consideration should almost lead one to imagine, that if mankind were all produced from one and the same stock, the black skins of the Ethiopians, &c. might possibly be owing originally to some such accidental cause."—See Edwards' Plate 212.

WILLOW OAK.

QUERCUS PHELLOS.

[Plate VI. Vol. 3.]

[A Branch, with leaves and acorns of the natural size.]

This species, which is very remarkable for its foliage, begins to appear as you go from the north southward, in the environs of Philadelphia; but it is not so multiplied, and does not attain the same degree of expansion there, as in the more southern states, Virginia, the two Carolinas, and Georgia, where the temperature, less cold in winter, appears evidently to have a favourable influence on its vegetation. It is, however, only in the maritime part of the middle and southern states, that the Willow Oak is observed; it seems to be unknown in the interior of those very states, where the land is hilly, and the temperature colder. It is most probably to be found in lower Louisiana, which, for the climate and nature of its soil, very much resembles the lower part of the southern states which I have just mentioned. I did not remark it beyond the Allegheny Mountains, in the states of Kentucky and Tennessee.

The Willow Oak commonly grows in very moist, and even wet soils, and united with the tupelo, the small magnolia, the red flowering maple, the red bay, and the water oak, it borders the numerous swamps which exist in the maritime parts of the southern states. In these situations, which, as I have said, are such as suit it best, it rises to the height of fifty or sixty feet, with a diameter of twenty or twenty-four inches. The trunk, even in the old trees, is covered with a smooth bark, of which the cellular texture is very thick. The leaves are from two to three inches long, of a light green, smooth, narrow, entire, and resemble those of the willow, for which reason it is called the Willow Oak, the only name given to it throughout all the parts of North America in which it grows.

I have just said that the Willow Oak is rarely met with but in very humid situations. This assertion admits of exceptions. In fact, from some cause difficult to assign, it is sometimes found near the sea, amid live oaks, in very dry and sandy soils. It then, seen from afar, has all the appearance of the latter species, both with respect to its form and its foliage, which remains green several years together; but, on closer examination, it is soon distinguished by its leaves, which are shorter and much narrower, as well as by the texture of its timber, which is very porous.

The acorns of the Willow Oak, seldom abundant, are small, rather round, of a dark brown, and very bitter. The cups are shallow, and somewhat scaly. When kept in a cool place, they preserve their germinating faculty several months without shooting.

The timber of the Willow Oak is reddish, the grain coarse, and the pores are very open; for which reason the staves made of this wood cannot serve for barrels or pipes, destined to contain spirituous liquors, or even wine; the staves made of it, are therefore ranked with those made of red oak, and used for the same purposes. The quantity made of it is, however, very inconsiderable; for this tree, confined to certain local situations, is very little multiplied compared to many others; and I will even venture to say, that the whole of what exists of it in the United States, would not be sufficient, if used alone, to supply the demand of the country, and those of trade, during the course of two years. In some parts of lower Virginia, and particularly in the county of York, experience seems to have proved that the wood of the Willow Oak possesses great strength and tenacity, and that it is less apt to split than that of the white oak; and it is on account of this property, that after being dried, it is used for making felloes for cart and chair wheels. This use, and that before mentioned, are the only ones to which I have found this wood adapted; nor do I think it so fit for them as choice

CHESNUT SIDED WARBLER.

BALTIMORE ORIOLE.

pieces of post oak, or white ash. Yet I have seen the fields of several habitations, in the environs of Augusta, in Georgia, of which the fences were, in part, made of Willow Oak; but they last, at most, eight or nine years, while those made of chesnut white oak last fourteen or fifteen. The Willow Oak yields but very indifferent fire-wood; and, when felled for this purpose, is always ranked with what is sold at the lowest price.

From the foregoing remarks, it may be considered, that this tree, with respect to the advantages which arts and trade can derive from it, cannot much interest Europeans, nor even the inhabitants of the United States, who, in clearing their lands, ought not to take any care for its preservation.—*Michaux.*

CHESNUT-SIDED WARBLER.

SYLVIA PENNSYLVANICA.

[Plate VI. Vol. 3.]

Linn. *Syst.* 333.—*Red-throated Flycatcher*, Edw. 301.—*Bloody-side Warbler*, Turton, *Syst.* i. p. 596.—*La figuier a poitrine rouge*, Buff. v. 308.—Briss. *App.* 105.—Lath. ii. 490.—*Arct. Zool.* p. 405. No. 298.—*Motacilla icterocephala*, Linn. *Syst.* i. p. 325.—Gmel. *Syst.* i. p. 980.—*Sylvia icterocephala*, Lath. *Ind. Orn.* ii. p. 538.—Vieil. *Ois. de l'Am. Sept. pl.* 90.—*Sylvia Pennsylvanica*, Gmel. *Syst.* i. p. 971.—Lath. *Ind. Orn.* ii. p. 540.—*Ficedula Canadensis icterocephalas*, Briss. iii. p. 517, 64, *t.* 27, *f.* 2.—*Id.* 8vo. i. p. 451.—*Ficedula Pennsylvanica icterocephalas*, Briss. *App.* p. 105.—*Id.* 8vo. i. p. 458, 78.—Collection of L. J. Salaignac, Esq.

Of this bird I can give but little account. It is one of those transient visitors that pass through Pennsylvania in April and May, on their way farther north to breed. During its stay here, which seldom exceeds a week or ten days, it appears actively engaged among the opening buds and young leaves, in search of insects; has no song but a feeble chirp or twitter, and is not numerous. As it leaves us early in May, it probably breeds in Canada, or perhaps some parts of New-England, though I have no certain knowledge of the fact. In a whole day's excursion, it is rare to meet with more than one or two of these birds, though a thousand individuals of some species may be seen in the same time. Perhaps they may be more numerous in some other parts of the continent.

The length of this species is five inches, the extent seven and three quarters. The front, line over the eye, and ear feathers, are pure white; upper part of the head brilliant yellow; the lores, and space immediately below, is marked with a triangular patch of black; the back, and hind head, is streaked with gray, dusky, black, and dull yellow; wings black, primaries edged with pale blue, the first and second row of coverts broadly tipt with pale yellow, secondaries broadly edged with the same; tail black, exteriorly edged with ash, the inner webs of the three exterior feathers with each a spot of white; from the extremity of the black at the lower mandible on each side, a streak of deep reddish chesnut descends along the sides of the neck, and under the wings to the root of the tail; the rest of the lower parts are pure white; legs and feet ash; bill black; irides hazel. The female has the hind head much lighter, and the chesnut on the sides is considerably narrower and not of so deep a tint.

Turton, and some other writers, have bestowed on this little bird the singular epithet of *bloody-sided*, for which I was at a loss to know the reason, the colour of that part being a plain chesnut; till on examining Mr. Edwards's coloured figure of this bird in the public library of this city, I found its side tinged with a brilliant blood colour. Hence, I suppose, originated the name!—Wilson.

BALTIMORE ORIOLE.

ICTERUS BALTIMORUS.

[Plate VI. Vol. 3.]

Linn. *Syst.* i. p. 162, 10.—*Icterus minor*, Briss. ii. p. 109, *pl.* 12., *fig.* 1.—*Le Baltimore*, Buff. iii. p. 231. *Pl. Enl.* 506, *fig.* 1.—*Baltimore Bird*, Catesb. *Car.* 1, 48.—*Arct. Zool.* ii. p. 142.—Lath. *Syn.* ii. p. 432, 19, Bartram, p. 290.—Collection of L. J. Salaignac, Esq.

This is a bird of passage, arriving in Pennsylvania, from the south, about the beginning of May, and departing towards the latter end of August, or beginning of September. From the singularity of its colours, the construction of its nest, and its preferring the apple-trees, weeping-willows, walnut and tulip-trees, adjoining the farm-house, to build on, it is generally known, and, as usual, honored with a variety of names, such as Hang-nest, Hanging-bird, Golden Robin, Fire-bird, (from the bright orange seen

through the green leaves, resembling a flash of fire,) &c. but more generally the Baltimore-bird, so named, as Catesby informs us, from its colours, which are black and orange, being those of the arms or livery of Lord Baltimore, formerly proprietary of Maryland.

The Baltimore Oriole is seven inches in length; bill almost straight, strong, tapering to a sharp point, black, and sometimes lead coloured above, the lower mandible light blue towards the base. Head, throat, upper part of the back and wings, black; lower part of the back, rump, and whole under parts, a bright orange, deepening into vermillion on the breast; the black on the shoulders is also divided by a band of orange; exterior edges of the greater wing-coverts, as well as the edges of the secondaries, and part of those of the primaries, white; the tail feathers, under the coverts, orange; the two middle ones thence to the tips are black, the next five, on each side, black near the coverts, and orange toward the extremities, so disposed, that when the tail is expanded, and the coverts removed, the black appears in the form of a pyramid, supported on an arch of orange, tail slightly forked, the exterior feather on each side a quarter of an inch shorter than the others; legs and feet light blue or lead colour; iris of the eye, hazel.

The female has the head, throat, upper part of the neck and back, of a dull black, each feather being skirted with olive yellow, lower part of the back, rump, upper tail-coverts, and whole lower parts, orange yellow, but much duller than that of the male; the whole wing feathers are of a deep dirty brown, except the quills, which are exteriorly edged, and the greater wing-coverts, and next superior row, which are broadly tipt, with a dull yellowish white; tail olive yellow; in some specimens the two middle feathers have been found partly black, in others wholly so; the black on the throat does not descend so far as in the male, is of a lighter tinge, and more irregular; bill, legs, and claws, light blue.

Buffon, and Latham, have both described the male of the bastard Baltimore, (*Oriolus spurius,*) as the female Baltimore. Pennant has committed the same mistake; and all the ornithologists of Europe, with whose works I am acquainted, who have undertaken to figure and describe these birds, have mistaken the proper males and females, and confounded the two species together in a very confused and extraordinary manner, for which indeed we ought to pardon them, on account of their distance from the native residence of these birds, and the strange alterations of colour which the latter are subject to.

Almost the whole genus of Orioles belong to America, and with a few exceptions build pensile nests. Few of them, however, equal the Baltimore in the construction of these receptacles for their young, and in giving them, in such a superior degree, convenience, warmth, and security. For these purposes he generally fixes on the high bending extremities of the branches, fastening strong strings of hemp or flax round two forked twigs, corresponding to the intended width of the nest; with the same materials, mixed with quantities of loose tow, he interweaves or fabricates a strong firm kind of cloth, not unlike the substance of a hat in its raw state, forming it into a pouch of six or seven inches in depth, lining it substantially with various soft substances, well interwoven with the outward netting, and lastly, finishes with a layer of horse hair; the whole being shaded from the sun and rain by a natural pent-house, or canopy of leaves. As to a hole being left in the side for the young to be fed, and void their excrements through, as Pennant and others relate, it is certainly an error: I have never met with any thing of the kind in the nest of the Baltimore.

Though birds of the same species have, generally speaking, a common form of building, yet, contrary to the usually received opinion, they do not build exactly in the same manner. As much difference will be found in the style, neatness, and finishing of the nests of the Baltimores, as in their voices. Some appear far superior workmen to others; and probably age may improve them in this as it does in their colours. I have a number of their nests now before me, all completed, and with eggs. One of these, the neatest, is in the form of a cylinder, of five inches diameter, and seven inches in depth, rounded at bottom. The opening at top is narrowed, by a horizontal covering, to two inches and a half in diameter. The materials are flax, hemp, tow, hair, and wool, woven into a complete cloth; the whole tightly sewed through and through with long horse hairs, several of which measure two feet in length. The bottom is composed of thick tufts of cow hair, sewed also with strong horse hair. This nest was hung on the extremity of the horizontal branch of an apple-tree, fronting the south-east; was visible one hundred yards off, though shaded by the sun; and was the work of a very beautiful and perfect bird. The eggs are five, white, slightly tinged with flesh colour, marked on the greater end with purple dots, and on the other parts with long hair-like lines, intersecting each other in a variety of directions. I am thus minute in these particulars, from a wish to point out the specific difference between the true and bastard Baltimore, which Dr. Latham and some others suspect to be only the same bird in different stages of colour.

So solicitous is the Baltimore to procure proper materials for his nest, that, in the season of building, the women in the country are under the necessity of narrowly watch-

ing their thread that may chance to be out bleaching, and the farmer to secure his young grafts; as the Baltimore, finding the former, and the strings which tie the latter, so well adapted for his purpose, frequently carries off both; or should the one be too heavy, and the other too firmly tied, he will tug at them a considerable time before he gives up the attempt. Skeins of silk, and hanks of thread, have been often found, after the leaves were fallen, hanging round the Baltimore's nest; but so woven up, and entangled, as to be entirely irreclaimable. Before the introduction of Europeans, no such material could have been obtained here; but with the sagacity of a good architect, he has improved this circumstance to his advantage; and the strongest and best materials are uniformly found in those parts by which the whole is supported.

Their principal food consists of caterpillars, beetles, and bugs, particularly one of a brilliant glossy green, fragments of which I have almost always found in their stomach, and sometime these only.

The song of the Baltimore is a clear mellow whistle, repeated at short intervals as he gleams among the branches. There is in it a certain wild plaintiveness and *naiveté*, extremely interesting. It is not uttered with the rapidity of the ferruginous thrush, (*Turdus rufus,*) and some other eminent songsters; but with the pleasing tranquillity of a careless plough-boy, whistling merely for his own amusement. When alarmed by an approach to his nest, or any such circumstances, he makes a kind of rapid chirruping, very different from his usual note. This, however, is always succeeded by those mellow tones, which seem so congenial to his nature.

> High on yon poplar clad in glossiest green,
> The orange, black-capp'd Baltimore is seen,
> The broad extended boughs still please him best;
> Beneath their bending skirts he hangs his nest;
> There his sweet mate, secure from every harm,
> Broods o'er her spotted store, and wraps them warm;
> Lists to the noontide hum of busy bees,
> Her partner's mellow song, the brook, the breeze;
> These, day by day, the lonely hours deceive,
> From dewy morn to slow descending eve.
> Two weeks elaps'd, behold a helpless crew!
> Claim all her care and her affection too;
> On wings of love th' assiduous nurses fly,
> Flowers, leaves, and boughs, abundant food supply;
> Glad chants their guardian as abroad he goes,
> And waving breezes rock them to repose.

The Baltimore inhabits North America, from Canada to Mexico, and is even found as far south as Brazil. Since the streets of our cities have been planted with that beautiful and stately tree, the Lombardy poplar, these birds are our constant visiters during the early part of summer; and amid the noise and tumult of coaches, drays, wheelbarrows, and the din of the multitude, they are heard chanting "their native wood notes wild;" sometimes too within a few yards of an oysterman, who stands bellowing with the lungs of a Stentor, under the shade of the same tree; so much will habit reconcile even birds to the roar of the city, and to sounds and noises, that in other circumstances, would put a whole grove of them to flight.

These birds are several years in receiving their complete plumage. Sometimes the whole tail of a male individual, in spring, is yellow, sometimes only the two middle feathers are black, and frequently the black on the back is skirted with orange, and the tail tipt with the same colour. Three years, I have reason to believe, are necessary to fix the full tint of the plumage, and then the male bird appears as already described.

The males generally arrive several days before the females, saunter about their wonted places of residence, and seem lonely and less sprightly than after the arrival of their mates. In the spring and summer of 1811, a Baltimore took up its abode in Mr. Bartram's garden, whose notes were so singular as particularly to attract my attention; they were as well known to me as the voice of my most intimate friend. On the thirtieth of April, 1812, I was again surprised and pleased at hearing this same Baltimore in the garden, whistling his identical old chant; and I observed that he particularly frequented that quarter of the garden where the tree stood, on the pendant branches of which he had formed his nest the preceding year. This nest had been taken possession of by the House Wren, a few days after the Baltimore's brood had abandoned it; and curious to know how the little intruder had furnished it within, I had taken it down early in the fall, after the Wren herself had also raised a brood of six young in it, and which was her second that season. I found it stript of its original lining, floored with sticks, or small twigs, above which were laid feathers; so that the usual complete nest of the Wren occupied the interior of that of the Baltimore.

The chief difference between the male and female Baltimore Oriole, is the superior brightness of the orange colour of the former to that of the latter. The black on the head, upper part of the back and throat, of the female, is intermixed with dull orange; whereas, in the male, those parts are of a deep shining black; the tail of the female also wants the greater part of the black, and the whole lower parts are of a much duskier orange.

I have observed that these birds are rarely seen in pine woods, or where these trees generally prevail. On the ridges of our high mountains, they are also seldom to

be met with. In orchards, and on well cultivated farms, they are most numerous, generally preferring such places to build in, rather than the woods or forest.—*Ib.*

EXTRACT FROM THE DIARY OF AN ORNITHOLOGIST DURING A SOUTHERN TOUR.

(*Concluded from p.* 284, *Vol. II.*)

At Savannah, I had the pleasure to become acquainted with some of the leading Sportsmen of that place, and joined them in several excursions after Partridges, which abound in the greatest plenitude throughout that region. These birds are mostly found in fields covered with Indian grass, or, to use a southern phrase, in "straw fields,"—which generally are so extensive that the game seldom leaves them to take shelter in the adjoining woods. In consequence of this, the sporting is not attended with much fatigue, and the success is greater than at the north, where the numberless thickets protect this species of game. On an excursion of a few hours, in the immediate vicinity of Savannah, a small party bagged forty-three Partridges from one field, and out of seven coveys. I have observed that these birds are much stronger in the markings of their plumage, than those of the north; and I can account for it only from the fact, that the weather is so much milder at the south, that it does not check the increasing beauty of the plumage, at any period between the moulting seasons. On a comparison of my southern specimens with those shot in the vicinity of Philadelphia, the contrast is very evident. In this latitude these birds do not pair until the middle of April, for the above excursion was made about the 28th of March, and they were yet congregated in coveys of about a dozen each; indeed they are so numerous that the southern Sportsmen have no set period to refrain from shooting them, only that which is defined by the appearance of the *Moccasins*, (venomous serpents,) which become dangerous about the first of April. Saw several on the day above mentioned. Also heard some hounds in full cry after deer, in an adjoining wood. Endeavoured to get a shot at a White Ibis, (*Tantalus Albus,*) which had settled on a large magnolia tree in the centre of the field, but did not succeed. I afterwards heard of four of these birds being exposed for sale in the Savannah market, but, much to my regret, they were disposed of before I had an opportunity of securing them.

Savannah can boast of some first rate Sportsmen; two of these, Messrs. L—— and M——, with whom I became acquainted, are of this order. Mild and polite in their manners, it is truly a pleasure to accompany them on an excursion after game; and on several occasions I experienced from them the strongest testimonials of a generous and hospitable spirit.

I was struck with the singular actions of an old pointer dog belonging to Mr. M——, a remarkable fine animal, which, on approaching game, would crouch on his belly, and drag himself to the desired spot. I have now and then seen the same actions in other dogs of the setter breed, but not to the extent as manifested in this dog. Mr. L—— had one of the most promising young dogs I ever saw, which recovered some wounded birds under the most difficult circumstances.

Having expressed a desire to visit some of the sea islands, and part of the coast of Georgia, I received an invitation to make my home at a plantation on Wilmington Island, which borders Warsaw Sound, and is within a few miles of the ocean. I accordingly, (March 31st,) visited this place, and was most politely received at the landing by Mr. B——, who offered me the hospitality of his house, and any facilities I might require in furtherance of the objects which brought me there. Wishing to secure some specimens of the southern-shore birds, I availed myself of his kind offers, and accepted, (April 2d,) the services of four negroes and a boat, and made an excursion among the inlets and islands along the coast. Saw numbers of the Blue Crane, Snowy Heron, (*Ardea Candidissima,*) Great White Heron, (*A. Egretta,*) Long-billed Curlew, (*Numenius Longirostris,*) Great Marbled Godwit, (*Scolopax Fedoa,*) Black-bellied Plover, (*Charadrius Apricarius,*) Telltale Snipe, (*S. vociferus ;*) and among the high grass which bordered the different inlets, vast quantities of the Sea-side Finch, (*Fringilla Maritima.*)

I witnessed among the Fish-Hawks, (*Falco Haliætus,*) this day, a sight truly interesting and grand. The tide was ebbing fast, and leaving the numerous sand-bars in Warsaw Sound exposed to view, while in the shallow water between these bars, multitudes of fish could be seen sporting, enlivened as it were by the exhilarating influence of a vernal sun. To one of these spots more than any other, was the attention of the Fish Hawks drawn. High over this, sailing and counter-sailing, in circles, I counted thirty-seven of these noble birds, watching, with anxious eyes, the finny tribe sporting beneath them. For a considerable time, not a plunge was made by a single Hawk. They would soar to an immense height, and then descend as if anxious to strike their prey, and reap the reward of their efforts; but some counteracting power prevailed, and they continued their graceful evolutions in the air for a considerable length of time. I thought my presence might be the cause of this, and I withdrew; and, at a distance, seated

myself on a fragment of an old wreck, which lay imbedded in the sand on the beach. But human presence was not the obstacle which interfered with their favourite employment of fishing. I suspected, then, that their great enemy, the *Eagle*, was somewhere within their view; nor was I mistaken, for, far above the Hawks, and almost beyond the power of human vision, I discovered an object floating in the air, which, by its regular evolutions, I judged to be an Eagle, but the height was so great that I could not, with certainty, identify the character of the bird. The mystery was now solved,—for the presence of the Eagle was a restraint upon the Hawks; and, finding his surveillance so operating against his interest, he steered his course north, and was soon lost to sight.

Now, the Hawks began to plunge, and strike their prey so successfully, that four or five could be seen struggling on the surface of the water, with the ill-fated fishes within their powerful grasp; and, contrary to any thing I had ever seen before, instead of resorting to a dead tree to devour their food, (their usual practice,) each, as it secured its prey, would carry it to a neighbouring sand-bar, and there enjoy its feast. One, however, attempted to cross the sound with a fish in its talons, when its course was arrested by the return of the Eagle which immediately gave chace in order to secure the fish. The Hawk, finding its adversary gaining on him, instead of rising, as they usually do, in order to gain an ascendancy over the Eagle, darted down nearly to the water, and flew rapidly just above its surface; but its ingenuity would not avail, and it relinquished the fish from its grasp, which fell into the water. It is an opinion among many naturalists, that the Eagle will not descend to the water to recover a fish in a case like the above; but this Eagle stood upon no such niceties, for it darted to the water, and after securing its prize, went off at a moderate flight, to devour it at its leisure. There is much to admire in the Fish Hawk, when seeking its finny prey. There is a majesty in its flight as it cleaves the air, with motionless pinions, that scarcely belongs to any other bird. There is an interest excited by its hovering over the object before it strikes, and in the boldness and unerring certainty with which it does strike its prey, that cannot be attached to the actions of any other of the feathered tribe.

Saw numbers of the Fish Crow, (*Corvus Ossifragus,*) and the Marsh Tern, (*Sterna Aranea,*) but not an individual of the Lesser Tern, (*S. Minuta.*) Reached Warsaw Island,—felt somewhat fatigued,—and ordered the negroes to gather some oysters for my dinner, which, with some bread and wine, formed an excellent repast. The attention of a stranger cannot but be arrested by the quantities of oysters which line all the shores of the rivers and inlets of this region. They grow on all of the muddy spots, as high up as the top of the highest tides, but these are not so large and good, as those which constantly remain under water.

The negroes, during our progress down the Sound, had collected a large quantity of *conchs*, which afforded me much amusement to see them eaten, with greediness and relish. They were cooked as follows: The negroes made a fire out of pine-knots, over which a number of these shell-fish were placed, to be roasted; they would then break the shell with a billet of wood, and eat the contents. This animal substance appeared so tough and gristly, that it required a sharp knife and much strength to cut it; and, I should think, would defy the gastric powers of man to digest. But, to the negroes, it was so delicious a morsel, that they consumed nearly three hours before they got through their repast.

Took a stroll along the beach for several miles with a view open to the sea. Gave my gun and ammunition to the negroes to carry. Saw no birds, but a few females of the Red-breasted Merganser, (*Mergus Serrator.*) Left the beach, and went to the higher part of the island; and when passing through some tall grass, one of the negroes immediately in front of me jumped a deer within fifteen yards; could have killed it with duck shot had I been in possession of my gun; but before it could be handed to me by the man who was carrying it, the deer was out of view. This animal was no doubt driven on this very small island by some hunters from one of the neighbouring islands. These deer differ greatly in size from those of the north. South of the above spot, the deer are found still smaller, and north of it larger; and this difference is more manifest according to greater distances. I think naturalists must have noticed, that the largest deer are found far north, and the smallest far south, or until you reach the equinox. The largest deer, as well as their congeners, the rein-deer, the elk, and the moose, are inhabitants of the colder regions. The largest buck perhaps ever seen in this city, is in the Philadelphia Museum; this was killed in one of the northern districts of Maine, and is said to have weighed 300 pounds; beside it stands one from New-Jersey, and is what may be called a fair sample of those which inhabit the middle states. A good sized buck of the middle states will weigh from 150 to 190 pounds. In North Carolina, it is a rare circumstance to find a buck that will weigh over 130 pounds, and in Georgia 120 pounds. And thus if we go south, we will find them still decreasing in size, until we come to the small Cervus Mexicanus of Central America.

On my return to my friend, Mr. B——, I procured some valuable specimens of birds, also the nest and eggs

of the Loggerhead Shrike. This bird has been represented as very suspicious, shy, and watchful, but I found it quite the contrary; its nest was built on an orange tree in my friend's yard, not more than nine feet from the ground, under which the family and servants passed hourly. This and the Blue-bird are the earliest which incubate in the southern states. Noticed other birds just building their nests, among which were the Mocking-bird and Yellow-throat Warbler. These sea islands abound with the ground Dove, sometimes to an injurious extent.

5th. Entered a dark grove of pines, which were made more sombrous by being shrouded with moss, (*Tillandsia Usneoides.*) Here I very fortunately succeeded in shooting a male and female Chuck-wills-widow, (*Caprimulgus Carolinensis,*)—birds hard to be procured, because they seclude themselves during the day time in the most dense and silent retreats, and only appear on wing at night.

The mournful appearance of the woods in many parts of the south, occasioned by the vast quantities of moss appended to every branch of the trees, affords but a gloomy aspect, and tends to impart melancholy feelings to a stranger travelling through these lonely parts. Nature seems enshrouded in eternal mourning, from which the eye can get no relief by resting on objects of a more enlivening kind. The moment you enter these almost endless depths, the mind is wrapt in solemnity, as though you were treading the mansions of the dead, and, as you proceed farther into these gloomy recesses, the feelings involuntarily accord with the melancholy silence which every where surrounds you. No noise save that of your own footsteps, and the monotonous notes of the ivory-billed Woodpecker, break through the dreary silence, and no animated being disturbs the reigning solitude, but the Owl and the Chuck-wills-widow in their noiseless flight. The pendulous shreds of moss of a dark grayish-olive colour, hang in dense masses, alike from the topmost, middle, and lowermost branches of the trees, until they trail the ground, and frequently form festoons from limb to limb of the same as well as the neighbouring trees. Such is the abode of the birds of night, and those timid animals which shun the face of man.

Saw a Fish Hawk take its prey to a large dead tree for the purpose of devouring it, and with much caution succeeded in shooting it. Before I had left the spot a large white-headed Eagle settled on the same tree, drawn thither no doubt by the appearance of the hawk, but it shared the same fate. Returned to the house, and prepared these two birds, and next morning departed for Savannah.

On my passage between Savannah and Charleston, saw numbers of water birds, especially the Cormorants, which were arranged in multitudes on the sand-bars in the different sounds through which the steam-boat plyed her way; was more particularly interested by seeing several flocks of the Scarlet Ibis, (*Tantalus ruber,*) which, while skimming the dark green wave, afforded a beautiful contrast between it and their brilliant plumage.

The vicinity of Charleston affords a vast field for scientific research; and it is often explored by resident naturalists, as well as those who are mere transitory visiters. Among the most scientific and enterprising of the former is the Rev. J. Backman, whose unceasing efforts in the cause of the natural sciences has done much to increase and sustain the love and pursuit of these studies in other members of that community. Mr. Backman has discovered several new birds and quadrupeds not hitherto known, and furnished details of their histories to some of the scientific journals now in course of publication. On the entrance of a stranger into Charleston, his attention will immediately be attracted by the number of the Black Vultures, (*Vultur jota,*) which may be seen perched on the tops of the houses in different parts of the city. As far as my observation went, I did not discover a single Turkey Buzzard, (*Vultur Aura,*) in the thickly settled part of the city. Witnessed the actions of one in the outskirts of the town, which convinced me, that these birds are not altogether dependant on sight to direct them to their food. I believe they are governed by both the senses, sight and scent, but more particularly by the former in eight cases out of ten. In the instance above alluded to, I saw the bird skimming the surface of a mud flat, which the tide had left bare, and then rise and make a circle over the same spot for several minutes. At length the Buzzard descended, and settled within twenty-five yards of where I was standing, and drew from beneath the surface of the mud the carcase of a cat. It was impossible that the bird could have been directed to this object by sight, as from the manner it was imbedded it was hidden entirely from view.

While at Charleston, I procured several specimens of the great Crow Black Bird, the nest, and eggs. This bird, I believe, is never found north of the Roanoke; their song, when congregated, is not unlike that of the Purple Martin, (*Hirundo Purpurea,*) but much louder. The male bird is very shy, but the female manifests much concern when an enemy approaches her nest, and will at times settle on a limb of the same tree during this encroachment. The nest I procured was taken from the top of a wild orange tree, and contained five eggs; there were on this and five other adjoining trees, thirty-six nests, containing from one to five eggs each.

HAWKING AND TIGER-HUNTING IN INDIA.

The Rajah had promised his hawks and cheetahs for a morning's amusement, and at day-light we sallied out. We were not out long before some royal curlews were discovered feeding in a field, quite unconscious of the array against them; but upon being put up, they were fully aware of their danger. It may prove interesting to those unacquainted with Indian field-sports, to have that which relates to hawking described; and the present day's sport is instanced to commemorate as gratifying a specimen of this particular kind as ever was witnessed. The curlew being roused, and seeing its enemies, screamed loudly, and began to mount almost perpendicularly. The hawk, which was of the long-wing soaring kind, named a *bhyree*, proceeded in chase. Aware of his inability to rise so fast as his quarry, he went away, as if not disposed to come back, but imperceptibly ascending. Having gone far enough, he tacked, and continued to do so until he was above the curlew. These turns which the hawk makes are very beautiful, and evince great sagacity. In the mean time, the curlew had got so high as scarcely to be within ken, having also gained a considerable distance from where it rose. It is necessary, therefore, that those following this sport should ride very hard, and the eye and mind being intent on the birds in the skies, renders the work of a hazardous nature. The hawk continues his tacking, though far away from the curlew, until he finds himself above the level of his prey, and then off he goes with the speed of lightning. The curlew perceives his disadvantage, and hastens to get over water, as the hawk knows that he is then in great danger, and refuses to strike. If, however, no water is near, the curlew makes for the ground as fast as he can fly, and it is only known by his descending that the hawk is above him, both are so high and so far away. At this moment the greatest delight is experienced. The hawk closing his wings rushes down in the pursuit with a velocity incredible to those who have not witnessed it, and such is it that his passage through the air sounds like a mighty wind. The curlew cannot escape, and before he has time to reach the earth the hawk has stricken him senseless. The latter is too careful to come with all his own force with the curlew to the ground, as he would most likely be killed; but he instinctively drops him when within a few yards, and then follows and secures his prey. The keepers and amateurs come up and prevent the hawk being injured by the fluttering or pecking of the curlew. The proceedings are similar to those in European countries after the flight and capture, such as breaking the poor creature's wings, and permitting the hawk to find his own way to the victim's heart through his breast, and having the marrow of the legs drawn out by a feather of his wing, and given as a sop of reward for his success. It was seldom the keeper had the kindness to ease the curlew's sufferings by killing it at once.

The riding, the hawk's manœuvring, and the attempts of the curlew to escape, make this sport one of great excitation. If the hawk can merely see his quarry, and he is a staunch bird, there is no fear of his quitting it, though he may set off in a contrary direction. Aid must be at hand to free him from water, or any birds such as kites or crows, who invariably attack him if without defence.

After breakfast we accompanied the Rajah in some boats upon the lake to hawk for water-fowl; there were plenty of teal, ducks, and coots; these were pursued by the baz, or short-winged hawk, and brought to land. It was amusing to see the hawk get upon the body of a bird, if they both fell into the water; for some of the coots and ducks were too heavy for them to carry. This was rather dull sport. In the evening we dined with the Rajah in the tent.

March 1.—To the right bank of the Ganges, (eight miles.) From two to three miles before reaching camp we quitted the high grounds, and came down into what are termed kader lands, *i. e.* those flooded in the rains, and yielding nothing but long grass, used in thatching houses, and such like purposes. This belt of land is on both sides of the river; it varies in width from half a mile to two miles, and continues for a great distance. There are a few scattered villages where a higher patch of ground offers some chances of harvest for the toil of culture, but for the most part, being low and swampy, with very thick grass and bushes, it is almost in the undisputed possession of tigers, and myriads of other game.

In the forenoon, flying rumours were about that sundry bullocks had been killed over night by a party of marauding tigers; nothing certain of their being near came in till three o'clock, when it was decided to mount and go in quest of them. Out the party sallied, his Excellency at its head. There were nine elephants with sportsmen in howdahs, and twelve others with pads only; these twenty-one made a good line, and we bent our course to the remains of the deceased bullocks. We beat up and down for an hour, putting up quantities of black partridge, hog-deer, and other game. The grass had been set on fire in some places by the herdsmen, for the purpose of their flocks being able to get at the young sprouts underneath: these fires, from the high wind, burnt with amazing fury, and the roaring noise was almost alarming; it required some ingenuity to get out of its course. After beating about for some time in the swamp we came upon a tiger. When the elephants found out what sort of play we were after,

they began to pipe and trumpet, with their trunks, and off they all scampered, with the exception of that on which his Excellency sat, and one other. What with digging the iron hook into their heads; and by dint of kicks, coaxing, and abuse, several were brought to the scratch, and among them the one belonging to the writer of these lines.

Coming to where the tiger lay, we saw him in the attitude of springing, his eyes glaring through the grass. After some few shots, among which, by monstrous luck, was one from my own gun, he yielded up his life, which till to-day had doubtless passed far from the busy haunts of man, shunning all but the society of his own immediate family, and stained with the slaughter of a thousand bullocks. Packing the dead, or, in sporting phrase, "bagging" the tiger, on the top of a pad elephant, we commenced a search for another. In a few minutes we roused two, and off they bolted; it was beautiful to see them cantering away, and now and then standing on their hind feet to see whereabout the enemy was. These two soon separated; the largest took to the right, and seemed disposed to force our line, as he came back towards us: he effected his purpose, but was felled by a shot; other shots followed quickly, and he soon was despatched. Of this fight I saw but little, having gone alone after my "own bird;" there were two small pad elephants with me; the beast was hunted backwards and forwards, when, on getting close to him, he charged one of the small elephants, upon which there was a man with a spear; with this weapon the man beat him off, the elephant running away as fast as he could. Quitting this, he attacked the other elephant, and in the hurry to get away, a man that was on his back fell off almost at the tiger's feet: I was obliged to stop and pick him up.

Having the misfortune to break the loose ramrod while ramming down a ball, nothing remained to me but patience, which of all virtues is less known or understood in tiger-shooting than in any other pursuit, and all that could be done was to keep the animal in view till the rest of the party came up from the conquest of the second. His entry into some thick grass being marked, the line advanced, and soon came upon him in some deep water, which he could not cross without swimming. Upon being disturbed, he turned and sprang up, seizing an elephant by the root of the tail; off they both went, amid the shouts and shots of the party. We had no regard to the person on the elephant, to the cooly or assistant who was standing with his feet within an inch of the tiger's teeth, or to the elephant himself, but, with a stoical indifference to the safety of all three, crack, crack, went the guns; it was in all ways a *feu-de-joie*.

After the tiger had ridden *en croupe* for twenty yards or thereabouts, he fell dead, pierced by eight or ten balls. He proved to be a young male, not full grown: the other two, a full grown male and female, were most likely his respected parents. While he was hanging on by the tail, the elephant, not liking his outside passenger, tried all means to dislodge him; he kicked with all his might, and put out a hind leg to pull him under his body: these kicks and cuffs must have been as serviceable to the tiger as a fall from the seventh heaven. The infinite dexterity with which so unwieldy an animal as the elephant can hook in a tiger, wild hog, or deer, with his hind leg is incredible. When once within the chancery limits of his four legs, no ingenuity or force can extricate the unlucky object from the process which it undergoes. A ball in the hands of a juggler does not change sides with greater celerity, nor is there any bread in Christendom more thoroughly kneaded. A full grown tiger is reduced, by this operation, to a mere mummy. After the termashu or sport was over, the elephant was inspected, to ascertain if he had been wounded; no marks were discernible, which to all of us seemed the oddest thing in the whole business.

No one, save the tiger himself, was less pleased at the recklessness of our proceedings, than the gentleman on the elephant, whose situation was not, by any train of reasoning, an enviable one; but how he, or any other person, could expect that such a batch of bumpkins in the mysteries of tiger shooting should be able, on their first finding, to behave with the least leaven of reflection, or approach to decorum, is certainly beyond all comprehension. The party returned to the camp at sunset, having left it at half past three, thus doing all our work in an hour and a half, and within a mile of camp. I have been, perhaps, too diffuse on this subject, but it was the *coup d'essai* of every one of the party, and its proving so good, and serving, though in an imperfect manner, to show what tiger shooting is, will, it is to be hoped, plead in excuse for the prolixity of the narration.

The little elephant, whose rider fell off his back, ran away to the jungles, and no tidings of the truant have since been gained.—*Archer's Tour in India.*

SPORTING IN BENGAL.

From the London Sporting Magazine.

On Sunday, Sept. 9th, 182–, I bade farewell to my Calcutta friends with a dark feeling of presentiment, which told me that most of us had parted to meet no more; and which foreboding time has but too well con-

firmed. But having to get all my things on board the budjrow, and arrange them for the voyage up the river, little time was allowed for moping meditation: and moreover, our fleet, consisting of eight or ten budjrows, with a cooking-boat attached to each, I did not much apprehend that the trip would be a melancholy one. Nine people out of ten know what a *budjrow* is; but, for the benefit of the tenth, I will describe it:—Imagine a nondescript sort of vessel, like Peter's fishing-boat, low before and high behind, with two capital apartments running from the stern to midships, and enclosed with green venetians; the roof flat, upon which the *manjee*, or steersman, is perched; the rudder, resembling a pole, with a river-hatch tied to the extremity; imagine a figure-head of Lord Clive, or Lord Amherst, in turban, red coat, and buckskin breeches; a bamboo mast, and paddles of the same tied to the gun-wale; and you have the budjrow complete.

My destination was not very distant, being only to Dinnapore, in Bâhar, a large central station, 500 miles from Calcutta by water; and I sent a favourite Arab, in charge of two servants, over-land, whilst a Persian hack accompanied me in the cook-boat—the sides of the boat being lined with bundles of rush, to prevent his heels from demolishing the crazy planks, and sending the whole concern to the bottom of the river.

Soon lost sight of Calcutta, and the taper flag-staff of Fort-William; but at a sudden turn of the river the current became so strong as to induce our lazy dandies to halt early in the evening. We were all of us, except the captain, freshmen, or, in the Anglo-Indian tongue, *griffs*, (perhaps so called from our similarity to fiery griffins, in our new red flaming jackets,) and thought tigers in Bengal were necessarily as plentiful as pepper-corns: so on shore we went at twilight, Ensign S—— and myself making for a beautiful woodland on our right. After beating till dark, without finding any thing but a few turtle doves, and jungle-crows, we espied a bangalow, (a snug kind of thatched villa, belonging to *mofussil, i. e.* country residents,) and near it the owner taking a quiet stroll on the lawn. Supposing that no man in his senses could live in so lonely a place, and one so *gamish* in appearance, without being a sportsman, we made our salaam to him, and inquired what part he would recommend for our morning's sport. I shall never forget the frigid look of the Missionary, as he answered, "Sir! *I* never indulge in *such* recreations!" We bowed to the earth and decamped, wishing that we had brought a bottle of claret with us, for that gelid tone would have cooled it far better than could any saltpetre.

Wednesday, 12*th*.—Stayed all day at Barrackpore. Jemmy G—— resolved on sport, loaded himself and two doriyas (dog-keepers) with ammunition—viz. powder, shot, brandy, and cheroots, and went ashore; where he entered the sacred purlieus of the Governor-General's park—popped away at some tame antelopes—maimed a gold pheasant for life—and at last narrowly escaped being ripped up by the nasal horn of Lord Amherst's pet rhinoceros. Luckily for Jemmy, before he had committed much devastation amongst this forbidden game, a native sentry caught sight of the intruder, and fired a ball-cartridge over his head. Jemmy took the hint, faced to the right about, and was slinking quietly back to his boat, when, as the devil, or Sheittaun, would have it, his blood-thirsty eye caught sight of a tall and stately adjutant, (not a spurred *militaire*, but a bird of the crane kind, six feet high; and without delay, he saluted it with both barrels, ball and buck-shot. The bird dropped dead, and poor Jemmy revelled in glory, and had to pay fifty rupees for destroying it—that being the fine for the death of this useful scavenger.

Thursday, 13*th*.—Got under way a little before sunrise, that most lovely period of a tropical day, which we enjoy with the greater zest, because we know that in another hour we shall all be gasping for breath, like shoals of cray-fish in a basket. As we tracked past a village a beautiful Brahminy-kite, with its rich chesnut plumage and snowy bosom, came floating above my head. It is a bird esteemed sacred by the Hindoos, but the temptation was too strong for a griff. I was sitting on deck with my double-barrel loaded, and as the kite sailed over the budjrow, I sent a bullet whistling through her heart. Nearly a hundred Indians were bathing and praying in the river, according to custom, and the yell uttered by them on this occasion was quite startling, on witnessing the death of their favourite bird. Juno would not have been more wrathful to have lost one of her peacocks. It was a foolish thing to offend the prejudices of a conquered people in any way; but whoever wore a gold-laced cap, and thought of consequences? In fact, even now I am given to *do* first, and *think* afterward. Many of the plebeians rushed into the water with menaces and execrations. This insolence on the *blackeys* part might not be endured; I pointed my gún at them, and cried, "*jow*, begone." They hesitated, but on shouting "*cropedar*, beware," in a louder tone, they one and all gave back, and retired muttering amongst themselves. Such is the habitual and fearful respect which natives of India entertain for Englishmen—it is that which alone upholds us in the East, and it is that which at present we are labouring to destroy.

After getting several miles above Chinsurah, the country became more promising for a shot; and an hour before sunset I landed with a setter and pointer, near an extensive morass, where I shot a brace of wild-ducks, and saw a

great abundance of white cranes and paddy-birds, which are, however, unfit for the *pot*, and, therefore, safe from Indian sportsmen, to whom patent shot and powder are expensive articles.

The paddy-bird, so called from its frequenting *paddy*, or rice-fields, is a species of crane, light in body, but standing nearly eighteen inches; the wings, back, and neck, are of a light olive-brown; the breast, belly, and sides, white; so that it appears a white bird when flying, and a brown one whilst on the ground. This bird, as well as the white crane, another elegant species of the same genus, abounds every where throughout the Indian plains and marshes, and feeds principally on small fish, grubs, mosquito-eggs, &c.

The Bengal morasses are most disagreeable places to wade through, being generally up to one's knees in mud and stagnant water; and every now and then the unfortunate sportsman comes to "a green and smiling spot," which he hails with rapture after losing his shoes and patience in the mud,—and no sooner steps upon than he sinks up to his chin in the treacherous bog,—there to remain, the scorn of gnats and mosquitoes, till succour may chance to arrive. I always found it the better plan to leave my shoes and stockings at home, and go the bog-trotter's pace; a few rushes and light feet will form a bridge over the vilest quicksand.

This evening I had some excellent shooting on the borders of an immense tank, or artificial lake, which was surrounded by a dense mass of underwood and tassel-grass. The tank, having long been neglected, was overgrown with weeds and lotus plants, and full of a large species of water-hen, of a beautiful bluish-green, with scarlet head, twice the size of the European kind, and tolerable eating.

After shooting a few I was wading in up to my arm-pits to pick up another, when I observed a long undulating furrow on the calm surface of the lake advancing towards me. After watching the motion in the water for a moment I faced about, and quickly regained *terra-firma*—not wishing to find myself on a sudden in an alligator's maw, and being unprovided with the expedient which saved Baron Munchausen from a like fate.

Saturday, 15*th*.—All this day the country was one wild extent of endless plain, covered with the *surpat* or tassel-grass, twelve feet in height, with a white silky blossom. These parts are entirely uncultivated, and harbour an immense number of leopards, antelopes, and wild buffaloes.

We were now many miles distant from Calcutta, and considered the campaign as opened. I killed several couple of snipes and wild-pidgeons this afternoon, and remarked some birds different from our European ones, and which I shall describe as I happen to recollect them.—1. A beautiful bird of the jay kind, of moré brilliant plumage, though in shape resembling our own.—2. The little spotted Indian dove, with back and wings mottled like tortoise-shell, (hence, perhaps, called *turtle*-dove,) the breast of a delicate pink, red eyes and legs, and not larger than a blue-bird.—3. The mina; as good a talker as our starling, and of the same genus, though much larger, and of a dark brown mixed with yellow and white; common to all India; is a gregarious bird, and resembles the starling in its habits and movements more than in shape or colour.—4. A light brown bird, with yellow beak and legs, as large as a thrush, but resembling an immense hedge-sparrow. I forget the native name.

Soon after dark, the jackals came down to the boats in such numbers as to require a general turn-out against them. The poor dandies, cooking their suppers on the beach, could not turn their heads without missing a portion of their meal, and several were bitten by these ravenous animals, which are naturally very cowardly; but hunger and strong temptation will make even a craven bold. Between the yells of the jackals, the shouts of the different black crews, the blazing fires, and report of the frequent shots fired at the enemy, the scene put me in mind of Pandemonium. No jackals, however, fell on the occasion, from the darkness of the night; and, after one of our dandies had narrowly escaped being shot through the lungs, it was deemed prudent to desist firing, and leave the ground in quiet possession of the enemy.

Sunday, 16*th*.—Throughout India there are not, I believe, more than thirty-five or forty chaplains, and not half that number of churches: therefore, it may be expected that Anglo-Indians grow somewhat negligent of forms, and particularly ignorant of the days of the week—few knowing whether it is our Saturday, Sunday, or Monday! Having neither bell nor *padré* to give our memories a jog, we landed at noon in a likely spot, where the country was diversified with patches of cultivation and rushy jeels. All the morning vast flocks of wild ducks and widgeon had been winging their way over-head, in such countless multitudes, that I am afraid to state the amount at which we calculated them. They flew in troops of from eighty to one hundred ducks in each, the troops following one another in regular succession; and a space of *two hours* intervened between the coming of the first and the last flight, although there was not a break of thirty yards between any one troop! In all probability they were bound for the inundation, which was now beginning to subside to the N. E. of the Sunderbunds, where the marshy delta of the Megna and Ganges would afford them a fine harvest.

Many stragglers were left behind, and I managed to kill five ducks, two widgeons, three couple of wild pigeons,

and a Pariah dog, which last had the audacity to attack my English Pointer.

A fine setter, belonging to my companion, had a narrow escape this evening; he swam into the Hoogly, towards some black object moving on the water, and which turned out to be a Hindoo corpse with a *koomer*, or bull-headed alligator feasting upon it. The dog turned tail immediately, like a very prudent general, readily acknowledging himself inferior to the enemy: but the *koomer*—the most savage and fearless of the crocodile kind—would not let him off so easily; but, leaving the black carrion, darted after poor Don without delay. Don was in a devil of a funk, and almost drowned himself through fright and conglomeration of ideas; and though he was close to the bank in a minute, and within ten paces of us, the alligator would undoubtedly have shortened his tail a few inches, if not his body also, had not S—— rapped away both barrels into the *koomer's* eyes, and I joined him in the courteous salute. The alligator gave a whisk with his long jagged tail, and disappeared. Never was dog so happy as Don, or man as his master, for I think S—— gave more than a hundred rupees for the brute.

Setters, pointers, terriers, and bull-dogs, are seldom worth their keep in Bengal. Game is too plentiful, and lies too well to require the aid of the two former, which seldom live long, or retain their noses. Terriers are useful as pets only, or for catching *bandycoots*. When or where bull-dogs are useful, I have never been able to discover.

Shooting in India is pursued in three kinds of country—the jungles, either grass or underwood; the paddy, or rice field; and the fens, or rushy banks of rivers and *nullas*. For the first, a couple or two of stout active spaniels may be very serviceable; especially in the tangled coverts which human beaters cannot penetrate, but which are hollow at the roots of the bushes. The sportsman may follow the windings of the deer or buffalo tracks with his ears and gun at full cock; and, if his dogs are alert, and water not too distant, pea-fowl, jungle-fowl, and very probably a wild buck, will reward a few hours toil. For the paddy-fields no dogs are required; a good double-barrel, plenty of dust shot, a bottle of brandy, straw hat, a sound liver, clear conscience, and a *will ready made*, fit him for the sport. After the rains, when the rice-grounds are partially overflowed, or still moist, the delightful recreation of snipe-shooting is most advantageously pursued. The snipes throughout India are nearly as numerous as mosquitoes, fly lazily, and would, perhaps, be more shy, but for the danger which ever attends their destruction. If the snipe-shooter intends to fill his bag, he must start when the sun is hottest, trudge across the plains up to his middle in water, whilst his brains are addled by the solar heat. Few snipe-shots live through two seasons; but still 'tis sport—glorious sport!! In the fens, and on banks of rivers—which are generally covered with masses of rush or grass, twelve and fourteen feet high—a well-trained spaniel may again be useful, especially if he is a good retriever. Every dog is glad enough to take the water in India; but they should not be allowed to indulge too often in a bath when heated, or it will speedily beget liver and canker in the ears.

Coursing and antelope shooting are the only healthful sports to be enjoyed in India—which I have found to my cost—if we except, perhaps, those grand field days, which can be enjoyed but seldom, as they require extensive preparations, hosts of beaters, and a troop of elephants. Single sportsmen cannot venture to rouse the tiger, leopard, or wild buffalo, from their lairs in the heavy jungle.

Jackals bite very hard, and not unfrequently spoil delicate gray-hounds, which have not been used to such rough treatment: the most savage and hard-mouthed dogs should therefore be preferred, if they are expected to run at every thing. Many men slip their gray-hounds after hares, foxes, and spotted deer only. I think that speedy lurchers would be found of great service; a brace of good ones would turn up a hyæna, an animal frequently encountered when beating for jackals in a jungle country. Many also, from fear of disheartening their dogs, never slip them at the large red antelopes, whose surprising speed and stoutness will beat most gray-hounds with the greatest ease. In the sands of the Mahanuddy, and on the flats bordering the Chilka Lake, these animals lose their superiority, by reason of their cloven hoofs sinking into the sand, whilst the spongy feet of the dogs buoy them up, like camels, on the surface. During the dry season, when the white sands of the river Mahanuddy lie exposed on either side the channel, to a great extent, we used to ride down the deer and antelopes with our horses alone, and transfix them, *en passant*, with hog-spears.

Monday, 17th.—This night, which happened to be a clear starlight one, but without a moon, S—— and myself determined to sit up for the jackals, a sport by no means exhilarating to an old Indian, but from its novelty and singularity peculiarly adapted to freshmen, who are not afraid of the night air.

I cannot imagine how we should get on in India without that useful animal the jackal: he is positively bread and cheese to sportsmen of all degrees; he is not, indeed, food for the *body*, but he is for the *mind;* and is esteemed by fox-hunters, coursers, shots, and badger-baiters, alike! Nor must his universal services as a scavenger and devourer of the village filth be overlooked. We hunt him,

course him, shoot him, bait him, entrap him, and skin him; and yet he is, without exception, the most useful little wretch in Hindoostan. Without him, the kite, and the argeela, in all probability that horrid scourge, the plague, would, before now, have paid us a visit.

The night was a clear twilight, and taking up our guns, we left the budjrow at ten o'clock, and took up a position behind some felled timber, which lay on an open common, between the river and a vast track of woodland in front.

We waited in silence and suspense for nearly an hour, though the spirit of locomotion was evidently stirring amongst the quadrupeds of the forest. First a few solitary howls were heard from the distant jungle; then the yelping became louder and louder; and finally settled into one general chorus:

"'Twas uproar all,
From Niger eastward, to the affrighted Nile."

This dreary discord, which nightly disturbs the Indian woods, is so wild and melancholy, that it is not by any means agreeable to a stranger. Louder and louder grew the yells of the jackals,—and the long whining moan of the hyæna on the right, left, and to the front; they seemed to encompass us; we cocked both barrels, knelt down, and prepared for action. On reaching the skirt of the jungle, the different packs appeared to separate in various directions; and a troop of more than fifty made directly for our ambuscade, open-mouthed, and yelling like a legion of devils. It was a moment of delightful and thrilling suspense; we could not see the approaching enemy, but we could hear the hoarse barks of the old, and the shrill treble of the young ones, coming down upon us like the wind. They were evidently on the scent of something—whether of qurselves, or otherwise, we could not guess; but we rested our guns over the trunk of a tamarind tree, and made ready to dispute the passage. In a second we could descry the dusky figures of the jackals, galloping towards us through the gloom; they drew nearer and nearer—three were a-head, the rest in a compact body behind—their noses to the ground, and their pace a long slouching gallop. "A little nearer yet," said I. "Fire!" Four barrels flashed and thundered through the darkness in a sharp and sudden volley:—the yells were hushed in a moment on every side; and we sallied from our ambush to return a list of the killed and wounded.

One jackal lay struggling upon the ground, and soon gave up the ghost;—another lay motionless a few yards off, apparently quite dead; but when I went to pick him up, the cunning brute gave a desperate gripe at my leg. Luckily for me, he seized the gun-barrel, and the deep mark of his fangs will remain impressed on it till it ceases to be a gun-barrel.

From the dark forests around, the wild yellings of the animals on all sides, and the lonely solitude of the hour, jackal-shooting, by twilight, is not without its charms.

SHIKAREE.

SHEEP KILLED BY CATS.

THE last Lancaster Pa. Examiner says:—"Incredible as this may sound, we have good authority for saying the deed has actually been perpetrated in this county. Several cats of the common species, with their progeny, have for three or four years past made an old stone quarry in Martic township their abiding place, and in that time, it would seem, have relapsed to the wild state, and acquired the ferocious and predatory habits natural to their tribe. A short time ago some of them were seen in pursuit of a full-grown sheep belonging to the flock of Mr. Martin Herr, of that vicinity. They soon overtook it, dragged it to the ground, and before the person who witnessed the scene could reach the spot, they succeeded in so lacerating the poor animal's throat, that it bled to death in a short time. It required considerable exertion to drive them off. A dog, subsequently sent in pursuit of them, caught one, but would probably have been himself worsted in the conflict that ensued, had not the owner come to his rescue. It is said they also pursued a small boy some time ago, and followed him a considerable distance, as is now supposed, with deadly intent."

RECIPE TO CURE THE MANGE IN DOGS.

Take 7 parts flower of sulphur,
2 do. carbonate of ammonia,
1 do. sulphate of copper.

Pulverize the two latter ingredients to a fine powder, and mix the whole together with hog's lard, to the consistency of soft paste. The dog should be rubbed well with this over all the parts affected with the mange, and repeated on the third day. Once rubbing will generally suffice; but a second application of the ointment will certainly effect a cure.

D.

FOX HUNTING.

DEATH OF THE FOX.

[Plate VII. Vol. 3.]

The morn is rising bright and red,
(As Venus blushed from Neptune's bed,)
And throwing by her dusky veil,
Descends into the lowland dale.
Light mist-wreaths round her forehead curl,
Her neck is gemmed with liquid pearl;
And hosts of fragrant flowers display
Their beauties in her shining way.
The radiant stars that came with night
To sing the chorus of the sky,
Now "pale their ineffectual" light,
Before the day-god's beaming eye,
And shrinking one by one away,
Leave the blue vault without a stain,
With here and there a cloud to stray
Like lonely wanderers o'er the plain.
The rosy tinge that marks the east
With beauty art can never show,
With morning's rise is still increased,
Until it breaks into one glow
Of rich and burning golden light,
Too glorious for the dazzled sight.

How still is all the sleeping earth!
And not a sound in heaven is heard,
Save now and then a note of mirth
Bursting from some awakening bird,

That in the ecstacy of life,
Up from its leafy quiet springs,
And with its mate in lovely strife,
Soars in the joyous beam, and sings.

All else is silent as the night,
And breathless as the early dew,
That sleeps in drops of glittering light
Upon the wild flowers rosy hue.

Frail things of earth that spring to life,
And drink the sun, and shine and die—
And yet with being's glory rife,
Are wonderful to human eye.

But hark!—a distant sound I hear,
It comes like music on mine ear—
Again!—it is the bugle's note,
Borne on the misty air along—
It seems upon the breeze to float
As if some spirit woke its song.
Again it breathes—and nearer now—
A louder and a clearer strain—
And echo answers soft and low,
As though she deemed her effort vain.

O! at the hour of early morn,
Earth has no such inspiring sound,

As that of the resounding horn
That wakes the silence all around.
How sweetly on the ear it thrills,
Bounding from o'er the distant hills,
Bearing the mind in fancy back
To chaste Diana's rosy track,
When thro' the summer woods she flew,
And scarce disturbed the honey'd dew.

But louder now the echoes swell—
And hark! I hear the distant yell
Of eager hounds that scent their prey
Thro' fields and fallow far away—
They come—they come—the clam'rous pack
Lifting their voices in full cry,
And close upon the fox's track,
Like mountain-torrent, they sweep by—
And horse and huntsman follow near,
Dashing thro' ditch, thro' briar and brake—
He strikes the spur, the bank they clear—
The whip is raised, they swim the lake.

Away—away—with careless speed,
Strained to the task, they onward bound—
Away—away—go man and steed—
Away—away—go horn and hound.

The wearied prey begins to faint,
He turns and doubles, all in vain—
The eager dogs defy restraint,
And hunt him to the open plain.

But safer 'mid the sheltering trees,
Back to the woods he speeds his way,
Yet still his scent is on the breeze,
And yelling hounds pursue their prey.

In vain he strives, with swifter pace,
To leave his ravening foes behind—
In vain he would their scent misplace,
And bid them snuff the vacant wind.

In vain his toil—in vain his care—
For bursting in with furious sound,
Like thunder on the summer air,
His fierce pursuers close him round.

From front to rear the gathering clan
Send their proud echo to the skies—
And 'mid the shouts of brute and man,
At length the hapless victim dies.

The early mists have rolled away,
And high in heaven careers the sun—
While in the face of garish day,
The horn proclaims the conquest won.

O did we take for heaven above,
(So sings the bard of melody,)
The pains we take for woman's love,
What very angels should we be.

O did we run our better race,
(Thus may the muse conclude her strain,)
With half the zeal we give the chase,
What endless honours should we gain.

As a correct knowledge of Horsemanship is necessary to those who pursue the manly and invigorating sport of Fox Hunting, the following hints are selected, which may prove interesting and instructive.

The great secret, or the very essence, I may say, of the art of riding, consists in assuming or taking a corresponding motion to that of the horse; or, in other words, the rider should accommodate himself, with a pleasant pliability to every motion of the horse: whenever it is otherwise, his seat will be unpleasant, unsafe, and indeed dangerous. This may be regarded, not only as the essence of horsemanship (as I have already observed,) but as the fundamental principle, from which subsequent excellence or proficiency must arise; and cannot be too deeply impressed on the minds of those who feel any interest in the subject. On this account, I would advise those who wish to become excellent horsemen to practice without stirrups, which they will find of the greatest possible service in forming a *close* secure seat. Respecting the *close* seat, it may not be amiss here to remark, that there are to be found advocates for the *loose* seat. On this subject, I had, some few years ago, a conversation with a riding master, who seemed to think that a *loose* seat in hunting was to be preferred: on expressing my surprise at such a notion, he endeavoured to prove the correctness of his position by observing, that, in case of a fall, the horse would not be so likely to roll on the rider, as the latter would most probably be thrown several yards from him. The man who reasoned thus is a good rider in the school, and has an elegant seat on horseback; but, like some others of his fraternity whom I have met with, he is timid; and his remarks on this subject were evidently the offspring of fear rather than philosophy; nor, when duly considered, can any thing be more remote from truth. Admitting that a loose seat will be the cause of precipitating the rider to a distance in case of the horse falling, the very circumstance itself appears to me more pregnant with danger than the chance of the horse rolling upon his rider. The most imminent danger, I conceive, of a horse rolling upon his rider, is when, in jumping timber, a wall, or other fence with a stiff top, the horse catches it with his fore feet, and goes "*bull-neck over*," to use a very expressive phrase of a sporting friend; and I am in doubt whether in this case the loose rider is not in more danger than the close rider. At all events, a loose rider must calculate on a great number of falls, since, with a seat of this description, he must be liable to be unhorsed on every trifling irregularity, circumstances which are constantly occurring, in following hounds across a country.

But it does not always happen, that a horse comes "*bull-neck over*," if he tips the top of a gate or style; since one which I at present possess, a good hunter, too, and has carried me many times after hounds, has frequently carried off the top bar of a gate, but kept his legs, nevertheless; indeed such a circumstance, when a strong horse comes thus in contact with a weak or rotten gate or rail, is sure to happen.

In advising a young sportsman to practice riding without stirrups, it must not be understood, that I consider the stirrups as useless: on the contrary, the ease of the sportsman depends mainly upon them, and frequently his safety also. I am aware that riding masters pretend (and Adams among the rest) that the use of the stirrup adds no security to the seat; but, if they mean to apply this maxim to riding after hounds, it is not only untrue, but a positive absurdity. The knee and the calf of the leg are the main holds of the horseman in riding over fences, and, indeed, in riding over a country in general, and these cannot be applied with half their embracing force to the sides of the horse, without the use of the stirrups: the experiment is easily made; and those who choose to take the trouble of making it will not only perceive the evident utility of the stirrup, but be fully convinced, that a short stirrup rather than a long one, and the foot home in it, is, of all positions, that which enables the rider to embrace his horse most firmly, and consequently is the most conducive to his safety.

In speaking of *short stirrups*, it will be necessary to define more particularly what I mean by the term; and this I will endeavour to do, in language sufficiently clear, so as to avoid, or prevent, even the possibility of misconception. The seat upon horseback may be compared to the seat upon a common chair; and, therefore, for hunting, I would have the stirrup of that precise length as would allow the rider to sit fairly upon the saddle: if, for instance, it be taken up so short that it pushes or removes the rider towards the cantle of the saddle (which he will easily perceive on trying the experiment) it is then too short; but, while the rider can sit fairly down in the saddle, I am of opinion the stirrup cannot be too short.

The instructions of riding masters are to keep the body erect, with the shoulders well back, and the chest thrown out: as general directions, these are correct enough; but, as in hunting, so many incidental or unforeseen circumstances occur, these instructions, though kept in mind, must be made subservient accordingly. Therefore, upon the incidental irregularities which occur in hunting, I must once more observe, that the rider must make his motions

correspond with those of the horse, and by keeping this maxim steadily in view, he will seldom be at a loss. It sometimes happens that a steep bank opposes the sportsman's progress, which it is not possible to jump, (and banks indeed present very frequently, awkward jumps, even when jumping is practicable,) but every perfect hunter will make his way over such places, and the rider must suit himself to the motion accordingly.

Riding to Hounds is a business where courage is regarded as an indispensable qualification ; but, although I am quite willing to allow to cotrage whatever may justly be its due ; yet it cannot be denied that getting well over a country depends much more upon the judgment ; and he that would be a good workman, must unite the two as much as possible, never forgetting that the former ought to depend on the latter :—"The better part of valour is discretion."

The pursuit of the fox was formerly a work of three or four hours ; and frequently extended to a much greater length of time. According to the modern system, the business is generally completed in about an hour ; and the fox is often killed, but more frequently lost, in half that time. The old English hunter was a large, heavy, powerful horse, whose excellence consisted principally in his leaping or jumping; and, in fact, it may be justly observed, that he was very well calculated for the hounds which he had to follow; but, with modern hounds, he would have been run out of sight in a very few minutes. "*It is the pace which kills,*" an observation common enough in the mouth of a sportsman ; one that merits the deepest consideration, and which cannot do otherwise than carry conviction to every reflecting mind. If a horse be pressed, and continued but only for a short time at the top of his rate, he becomes so exhausted that he cannot clear his jumps ; and he thus endangers his rider's neck, to say nothing of losing the sport ; but, as far as relates to the old English hunter, as the slowness of the pursuit allowed him to go *within himself,* or at his ease, so he was generally able to clear his leaps ; and although he might not be able to gallop half as fast as the modern hunter, he might perhaps be as good a fencer, if not better, since even cart horses have been known to clear enormous jumps.

In modern hunting, however, it is indispensable that the horse should possess great speed, if his rider is to enjoy the diversion ; and as the business of the chase is so much more rapid than formerly, it requires more judgment in the sportsman in riding to hounds ; yet, since no blown horse can be trusted even at a moderate jump, the necessity of keeping the horse's wind in him must appear so obvious as to need no further elucidation.

That the horse is as fond of the chase as the rider is evident, since his eye will be seen to sparkle with pleasure the moment he perceives the preparations for hunting. A horse, on his way to the place of meeting, will frequently manifest the pleasure he feels by a variety of antics; and when the hounds have been thrown into cover, and are trying for a fox, his impatience for the run is evinced by characteristic indications which are too clear and too expressive to be misunderstood. Nor under any other circumstances will a horse make the same desperate exertions, as in following hounds. In the latter end of the season of 1825, I had been hunting for a short time with Sir H. Mainwaring's hounds ; and, upon my return home, was mounted upon a mare, which, from having been much overworked, seemed scarcely able to go more than four or five miles an hour. I had something more than twenty miles to ride, and commenced my journey about nine o'clock in the morning. Whitley Gorse, the fixture for that day, for Sir H. Mainwaring's hounds, lay in my road, and as I proceeded, the hounds, with their attendant huntsman and whippers-in, overtook me. The mare perceived the approach of the hounds, before I was aware of the circumstance, and the first signal I received was her lifting up behind so high and so unlooked for, that I was thrown upon her neck. I accompanied the hounds to the cover, which was within a few score yards of the road, and they were no sooner thrown in than my mare manifested a degree of impatience which I had not expected to experience in her jaded state. In a few seconds, a fox was found ;—he broke away in gallant style with the hounds at his brush, and my mare testified so strong an inclination to follow, that I indulged her. I was never better carried ; and after a brilliant thing of one hour and five minutes, I witnessed the death of the fox. I mention this merely to show what that generous creature, the horse, will perform under such an excitement as hunting.

Having noticed the impatience which the horse manifests immediately prior to the run, it follows, as a necessary consequence, that, if this impatience be not judiciously restrained and his powers properly used, he must be blown very early in the run. The fact is, the commencement of the run is the most difficult part of the business—it is that which puts the judgment and skill of the rider to the severest test ; and the horse should be so managed as to prevent him from exhausting his strength in what may be called the first burst, and yet keeping him well with the hounds. Indeed, it appears to me that the horse goes much more pleasantly to himself as well as to his rider, when he has got what is called second wind ; and the same remark is susceptible of a more extensive application. The fox gets second wind, the hounds get second wind, as well as the horse, and the run, which up to this period might

be considered as an impetuous dash, becomes steady, as it were, and every thing proceeds with more regularity. At the commencement of the run, however, young fiery spirits are often as impetuous as their steeds, and, to say nothing of distressing their horses unnecessarily, sometimes mar the sport by riding too forward, or amongst the hounds —perhaps before them. When the hounds have found, they should be suffered to go away with their fox, and get well settled to the scent, without the least interruption—(and yet how often have I witnessed the contrary, in defiance of the entreaties, prayers, and ultimately of the deep curses, of the huntsman.) Nor, indeed, after this period should they be ridden too near or pressed by the sportsman: there should always be a sufficient space between the pack and the sportsmen for the hounds to turn; and, indeed, the sportsman may be said to be sufficiently near so long as he can distinctly observe the working of the hounds. As I have already observed, a horse should be restrained at the commencement of the run; but it is the judicious application of this restraint that renders it effective: horses should not be pulled about as they frequently are by ignorant horsemen, since the remedy then becomes as bad, if not worse, than the disease; and for the proper management of the horse at this juncture, good hands will easily perform what nothing else can properly accomplish: the sympathetic sensibility of the hand may be said to give the rider a complete controul over the powers of his horse, and this excellence can never be more beneficially applied, than during the first maddening impetuosity of the run:—and this, particularly, where the animal happens to be high spirited, or of a hot and fiery temperament. Horses of this disposition, like impetuous riders, are anxious to lead; and indeed, it must be admitted that they go more pleasantly when placed in the front rank; and therefore, when such an enviable situation can be obtained, it is advisable to occupy it. Unfortunately, this taking the lead often produces injudicious, and indeed injurious, rivalry; inasmuch as sportsmen thus approach too near the hounds, force them beyond the scent perhaps, and create the most vexatious confusion. It is no wonder that huntsmen are sometimes unable to restrain their temper within due bounds.

ON LEAPING.

The act of leaping or jumping requires more than ordinary exertion in the horse; and, of course, the extra exertion will be regulated by the nature or extent, or both, of the jump.

Generally speaking, I would advise sportsmen to avoid, as much as possible, all jumps with stiff or unbending tops, since, however perfect a horse may be, mistakes, or *mis-footings* may occur; and as an elastic or weak fence will give way to the weight of a horse, so I consider it preferable to a gate, style, rail, or wall. It is true, there are many horses very clever at jumping timber and walls; yet, for the reasons already stated, I should prefer the elastic fence, and only put the horse's abilities to the test in regard to the former, where it appeared absolutely necessary.

A horse indeed is sure to excel in that species of leaping to which he has been the most accustomed. Brooks, when the banks are sound, are no serious obstacles, unless wider than the horse can cover; but the worst of brook-jumping is, the banks are seldom to be depended on, and hence serious accidents sometimes result—to the horse at least, if not to the rider. If the bank happens to give way, on the side from which the horse is taking his spring, he is very liable to break his back or receive some serious or incurable injury. If in crossing a brook, the sportsman can contrive to put his horse at it where the banks slope towards the water, he is more likely to get safe over, as in such places, the banks are seldom undermined by the action of the water—the hollow banks are, of course, the most to be dreaded. In going at a brook, it is the most advisable to put the horse very smartly and vigorously at it; the same remark is equally applicable to a gate; and indeed any large and rasping leap. In regard to gates, I honestly confess I am seldom disposed to jump one, where I can conveniently open it; and there are few horses that will not, with a little practice, become very handy at opening gates.

In crossing a country, the sportsman should keep a look out forward: as soon as he is over one fence, he should cast his eye to the next, and direct his horse to the most convenient spot to get over, consistently with keeping his place.

As to the best mode of teaching a horse to leap, which is intended for hunting, I have little hesitation in asserting that the bar is of very little service. In the first instance, I should feel no objection to put a young horse over the bar, to teach him to bend his knees; but, it is in the fields where he must acquire a knowledge of his business; and on this account he should receive his instruction in the fields. His lessons, however, should never be unreasonably extended, or he will become disgusted; a horse seldom jumps willingly unless after hounds. When a young horse takes his exercise, he may be put over a few fences, and this perhaps is the best way of imparting the necessary instruction.

ON THE SEAT WHEN LEAPING.

"The place of the legs must be perpendicular from the knee; if you place them backwarder, the action which

the body must take, would loosen them, and then you have no hold." Now, I am inclined to think, that the situation of the leg should not be exactly "perpendicular from the knee," but gently inclining backwards, such a position of the leg enabling the rider to make use of more compressive or adhesive power, and consequently enabling him to sit more closely and more firmly on the saddle; nor have I the least doubt, that, if the reader will take the trouble to try the experiment, he will find I am borne out in such a conclusion. It is true, in a small or ordinary leap, there is no necessity for any excess of adhesive power, but when a rasper is to be got over, the necessary violence in the action of the horse is so great that the firmest hold with the legs and thighs becomes indispensable; and the position (of the legs) which I have pointed out will be found to be that which is the best calculated to accomplish the object with ease and safety both to the horse and rider.

Young riders can scarcely be induced to lean the body backward enough when the horse has taken his spring, and for this very reason they cannot preserve a motion in consonance or correspondence with that of the horse, and the consequence is, that their seat becomes disordered or disturbed; they are thrown forward and sometimes completely unhorsed. They should lean freely and fearlessly backward; since they may rest assured, it is not possible for them to overshoot the mark or lean too much backward.

Experienced sportsmen, in leaping, frequently elevate the whip hand as the horse is descending, a practice which the professed riding master will by no means tolerate. According to the doctrine of the riding master, the body should be kept square and the whip hand low, as (says he) if the whip hand be raised, the body of the rider must be pulled out of the square, and the balance destroyed. So far it may be said to be all very well; but yet it will scarcely, I think, bear the test of examination. When the horse has taken his spring, and is descending or coming to the ground, the left or bridle hand is necessarily drawn forward; and if, at the same moment, the whip hand be elevated and thrown back, the balance at least of the body is preserved, however it may be drawn out of the square. And here it may be very justly observed, that some horses, when descending, bring their noses lower than others, and these consequently require the accommodation of the bridle hand to a greater extent. In the season of 1824–5, I rode a fine grey mare, that in descending brought her nose very low indeed, and consequently was apt to pull a strange rider out of his seat. Some months before she came into my possession, a gentleman's huntsman (a youth) mounted her for the purpose of following his harriers, but she, in leaping, pulled him over her head; and though this lad attempted to ride her several times, he never completely succeeded in accommodating her peculiar mode of bringing down her nose. Nevertheless, she was not difficult to ride, and, as a hunter, never perhaps had a superior.

If, however, I feel no disposition to censure the practice of elevating and throwing back the whip hand in the leap, there is another purpose to which I have sometimes seen the same hand applied, in the same operation of the horse, which cannot be too severely censured: I allude to taking hold of the cantle of the saddle, a method which some few sportsmen adopt, either from ignorance, fear, awkwardness, or from some other motive equally reprehensible.—To say nothing of the unsightly appearance which such a position presents, the object of the rider is frustrated by the very means which he puts in practice to accomplish it. Taking hold of the cantle of the saddle with the whip hand, renders it impossible for the rider to make use of his bridle hand in a proper manner; consequently he endangers the safety of the horse, and renders his own seat as insecure as possible. A person who adopts this highly injudicious method of riding, is constantly exposed to serious accidents.

A good sportsman will, as often as possible, ride parallel with the pack; not after them, unless, by short turns, he is obliged to do otherwise; by which means he can see every thing that is going on, and anticipate the probable cause of hounds coming to a fault: and I believe a good huntsman and a minute observer, will, twice out of three times, discover the object in the line of the hounds that caused it, and, as soon as he suspects it, pull up his horse: for instance, a church, a village, a farm-house, a team at plough, men at work, sheep, and, above all, cattle, are the things most likely to impede the scent: (be it remembered, that the breath of one cow will distract hounds more than a hundred sheep:) when any of these objects present themselves in the face of the hounds, you may then anticipate a stop; and by pulling up your horse, and observing which way the pack inclined before the check, you will be able (without casting) to hold them to the right or left accordingly.

Every person should, if possible, take his place and keep it; and after the bustle of the first five minutes every thing assumes a degree of regularity, of which before it was not susceptible.

In a fair country, and hounds in condition, it is my opinion, that if the above observations could be carried into effect, few foxes would escape. Patience is the best performer in the chase! All hounds in these times are well enough bred, and all hounds have power enough to kill their fox.

NOTES OF A NATURALIST.

BY JACOB GREEN, M. D.

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Our Village.—Music of Birds, &c.

In the country, the early morning hours, and those of closing day, are peculiarly interesting to the naturalist. When rosy morning first appears, all around seems fresh and unsullied; and in the spring and summer months the air is peculiarly invigorating and elastic. Every one who delights in the music of nature, must listen,

When the song of the grove hails the rising of day.

The fresh fragrance of the fields and gardens, and the cheerful carolling of our tuneful birds, cannot fail to be grateful to the senses, and to be perfectly in unison with the feelings and sentiments of every well-regulated mind.

It was a strange and wild theory of Buffon, to say the least of it, that men and other animals degenerated in the climate of America. Among the examples which he brings forward in support of this notion, is our sweet Wood Thrush, (*T. Melodius,*) which he imagines to be the same species of bird as the Song Thrush, (*T. Musicus,*) of Europe. Our Thrush he then represents as destitute of any note but a single scream, having so far degenerated by food and climate from his progenitors in Europe, as now to utter nothing but harsh and unpleasant sounds, like the cries, he says, of all birds that live in wild countries inhabited by savages. There is more poetry than natural history in all this. Who, that has devoted any attention to this subject, does not know, that the lonely exile in the unfrequented and dreary forests of Siberia and Lapland, is often cheered with the music of the Grosbeak; or that the cannibal of New-Zealand, reposing in his wigwam, may hear the mellow song of many warblers of the night? With regard to the Wood Thrush, Wilson refutes the fanciful theory of Buffon, by giving us a beautiful description of its habits and song. After remarking that the voice, energy, and expression, of birds of the same species, differ as widely from each other, as the voices of different individuals of the human race, he observes of the Wood Thrush: "I remember one, whose notes I could instantly recognize on entering the woods, and with whom I had been, as it were, acquainted from his first arrival. The top of a large white oak, that overhung part of the glen, was usually the favourite pinnacle from whence he poured the sweetest melody, to which I have frequently listened, till night began to gather in the woods, and the fire-flies to sparkle among the branches." This sweet and solitary songster arrives in Pennsylvania about the latter end of April, and soon announces his presence. "With the dawn of the succeeding morning, mounting to the top of some tall tree, that rises from a low, thick shaded part of the woods, he pipes his few clear and musical notes in a kind of ecstacy, the prelude, or symphony to which, strongly resembles the double tongueing of a German flute, and sometimes the tinkling of a small bell; the whole song consists of five or six parts, the last note of each of which is in such a tone, as to leave the conclusion evidently suspended; the finale is finely managed, and with such charming effect, as to soothe and tranquillize the mind, and to seem sweeter and mellower at each successive repetition. During the burning heat of the day he is comparatively mute; but in the evening the same melody is renewed, and continued long after sun-set. Even in dark, wet, and gloomy weather, when scarce a single chirp is heard from any other bird, the clear notes of the Wood Thrush thrill through the drooping woods from morning to night, and it may be truly said that the sadder the day the sweeter is his song." Every school-boy in the village who rambles over our woody hills, and along the margin of the creek, on Saturday afternoon, can testify to the truth of this beautiful description. The clear, mellow, flute-like notes of the Wood Thrush, always recall to my mind many interesting little adventures,—a thousand pleasing scenes and youthful sports in by-gone days; some of which I must be indulged in here repeating. A great portion of my holyday pastime, when at boarding-school, at Princeton, in New-Jersey, was passed with my hook and line, on the margin of Stony brook, not very far from the spot where the gallant Mercer fell during our revolutionary conflict. The quiet and retired situation of this gentle stream, the romantic and uncultivated solitudes by which it was then surrounded, and the marvellous adventures with the Indians, which are said to have happened along its peaceful banks in the early periods of American history, rendered *the brook*, as we used to call it, an oft-frequented and a deeply interesting place of resort. A considerable stretch of the stream passed through the estate of my grandfather, where I usually passed my holyday time, in joyous, unrestrained, and I hope innocent revelry. As I have always experienced an uncontrollable antipathy to strange dogs, whether

> Mongrel, puppy, whelp, or hound,
> Or curs of low degree,

for this reason, I rarely ever crossed the boundaries of the estate; but I could wander in these extensive and secluded retreats, without fear of molestation from any quarter. When the mowers were to be engaged in the neighbouring meadow; when the boys drove the cattle into these

pastures, distant from the family mansion; or when the woodman spent the day in the forest, preparing for our winter's fire, I followed in their train as far as this delightful spot. Then, while stealing alone along the borders of the bubbling brook, would I start up the little noisy bittern, whose protracted scream filled the forest with its echoes; the lazy tortoise, basking in the sunshine on the mossy rocks, alarmed, would slide into the smooth water; or the piping frog, hopping among the weeds, along the impending bank, would dash headlong into the stream, at my approach. Here, for hours, have I reposed on some fallen tree—my little red cork floating before me in the water—waiting patiently for some "glorious nibble." It was on such occasions, when the solemn stillness was only interrupted by the monotonous chirpings of the insects in the tall grass, the drowsy tinklings of the bells on the cattle, or the hollow, remote sound of the woodman's axe, that I remember first to have listened to the sweet song of the Wood Thrush. "The time has long past, and the scene is afar," but at this moment his notes seem to echo in my ear, and rise in my memory like the music of Carril. I will close this digression, by copying from an old manuscript some stanzas, suggested to my mind by his peculiar habits and his remarkable song.

THE WOOD THRUSH.

When bright Aurora gilds the morn,
And music bursts from brake and bush,
And lofty oak, and lowly thorn;
Oh then is heard the thrilling Thrush.

He, from some branching, aged tree,
The early breeze with rapture fills,
The joyous notes sweep o'er the lea,
And echo from the grassy hills.

The plough-boy blithe at peep of dawn,
Whistling along his wonted way,
Now pauses on the dewy lawn,
To catch the warblings of his lay.

But when the sun in glowing car
Rolls glittering o'er the panting plain,
Then deep in shadowy glens afar,
He whispers there a lonely strain.

But at pale evening's pensive hush,
When the gay glow-worm trims his lamp,
Again is heard the thrilling Thrush
In dewy dells and vallies damp.

There is another species of Thrush, which we used to call the *Thrasher*, (*T. rufus,*) which appears to be much more numerous, and is certainly better known than the one just noticed. It is often domesticated as a *cage-bird*, and his song is, to my taste at least, far superior to that of the ever-varying Mocking-bird.

As I have attempted to give a sketch of the scenery where the Wood Thrush is commonly found, I will now notice an assemblage of circumstances, always connected in my mind with the song of the Brown Thrasher, or as he is sometimes called, the Virginia Mocking-bird.

Though the days of my boyhood were principally passed in a large city, there was a beautiful spot in the neighbourhood, called Rose Hill, where I spent some of my happiest hours. This spot was distinguished for its rural scenery; a fine green lawn sloped gently in front of the mansion-house; and clumps of trees, hedges of briar and hawthorn, and parterres of flowers, tastefully arranged through the pleasure-grounds, all combined to render it highly picturesque, beautiful, and enchanting to my youthful imagination. There were two large griffins, or huge china dogs, in the shrubbery on the lawn, to which I became wonderfully attached. It was while stretched on the grass, near one of these figures, watching the graceful motions of my kite floating high up in the clear blue sky, that the music of the grove fell with peculiar rapture on my ear. The rapid warbling of the social little house wren, there mingled with the notes of the robin, and numberless other songsters; some in the branches over my head, and others in remote thickets. Above all, the loud and cheerful song of the Brown Thrush could be heard; the whole chorus produced "a soul-soothing and almost heavenly music, breathing peace, innocence, and mental repose." My fancy's eye can now discover this Thrush pouring forth his melody from the summit of an apple or a cherry tree, or the tops of the hedge-rows, and then, as if in modesty, plunge into the thick bushes, his long and graceful tail-feathers being spread out like a lady's fan.

I visited this sequestered spot a short time since; and found it, alas, how changed. The venerated friends of my childhood have long been gathered to their pious ancestors. The once hospitable and elegant mansion was now silent, dilapidated, and forsaken. The public highway now passed over the lawn; a vulgar substantial bridge crossed the little stream, instead of the light rural framework, near which I used to angle, and some ragged, roysterous, ill-favoured urchins, appeared to be the only inhabitants of this retreat, once the abode of so much refinement, domestic comfort, and literary seclusion.

It has been observed that there is something peculiarly remarkable in the adaptation of the music of birds to the human ear; quadrupeds seem to derive no pleasure from it; and birds themselves, of different species, notice but little the warblings of each other. Their various cries, or screams of distress and alarm, seem to be quickly under-

stood by all. Many a time have I been assailed by all the birds in the neighbourhood darting out of the bushes, and from the trees, in consequence of the shrieks of a young robin, which I have been endeavouring to place beyond the reach of a cat. To give another instance. While sitting at the door of a farm-house, in the vicinity of our village, just as the shades of evening began to gather; the birds were all hymning their little vespers, and the domestic fowls, one after another, were settling on the low branches of the trees for the night—when suddenly a dead pause in all these sounds and motions occurred; this was quickly succeeded by loud and various screams of alarm from every quarter. The smaller birds dashed into the briars and bushes for safety, and the domestic fowls dropped suddenly from the trees; some concealing themselves under the fences, while others cowered and trembled close to my very feet. The cause of all this hurry and alarm, was a prowling hawk, that swept swiftly over the spot, and had made a fruitless attempt to seize with his talons one of the chickens on the outermost limbs of a neighbouring tree. These examples will be sufficient to prove that the cries of one species are understood and attended to by other species. Whatever may be the truth with regard to musical sounds, it seems to be certain that the language of fear, or note of alarm, is universally comprehended by all the feathered tribes.

Singing birds are undoubtedly, for the most part, found near the habitations of man, and commonly follow in the track of cultivation. This is in part owing to the protection which he affords, and the greater facility in obtaining food. In the extensive deserts of land, or of ocean, their warblings, I think, are never heard. The Peterel, which is found far out on the sea, in almost every latitude, utters nothing but a monotonous squeak; yet I must confess that his notes to my ear were not disagreeable. I will close these desultory remarks, with an extract from my journal kept at sea, and which relates to this curious bird.

April 24. I was very much interested to-day in observing the habits of a little bird, which keeps principally in the wake of our ship, no doubt to pick up any aliment which may be thrown over-board. This bird is the Stormy Peterel, or Procellaria Wilsonii. It is called Peterel, from the Apostle Peter, because it seems to walk on the surface of the water. For hours I have stood at the taffrail, watching the motions of hundreds of these birds; some of them skimming gracefully over the surface of the waves, and curiously preserving the same ever-varying curves; some climbing up the hills of water, and others, in clusters, apparently at rest round an article of food. The sailors are very superstitious with regard to these birds, which they call Mother Cary's chickens, probably after some old witch or fortune-teller of that name. It is supposed by many that the Peterel, as it is seen in almost every part of the ocean, lives on the water entirely, and hatches its eggs under its wings. There is, of course, no truth in this opinion. It is surprising, however, what a length of time they continue on the wing; they have been the last objects which the darkness of the night concealed, and the first which the morning dawn enabled me to discover. They utter a low note, something like *weet, weet,* which is quite audible when they are near the ship. This some of the sailors translate into wet, wet, and say that it indicates stormy weather. It is generally supposed that the *same* species of Peterel inhabits both the European and American portions of the Atlantic. There are, however, two species. That which sweeps over the vast range of the European ocean is called the *Pelagic Peterel,* and that which inhabits the American Atlantic is called Wilson's Peterel, after our own great ornithologist. There is no one perhaps who crosses the ocean, but must feel indebted to these interesting little wanderers of the deep for many hours of amusement. At sea every thing, which tends to break the dreadful monotony of the wide waste of water and sky, amuses the mind. From the peculiar habits and the superstitious notions entertained by many with regard to the Peterel, it might suggest to the imaginative some fine fancyings; but with the exception of two or three allusions, it seems to have been entirely overlooked by the poet. The following lines served to amuse a tedious, and what would have otherwise been an unoccupied hour.

THE PETEREL.

What airy forms are on the deep?
Now dancing on her heaving breast,
Now sinking with the surge's sweep,
Now rising on its snowy crest.
'Tis th' stormy Peterel, ocean ranger,
Warning the sea-boy of his danger.

Ere morning rises from the sea,
Their ceaseless gambols they begin,
And the pale evening's fitful breeze,
Still wafts them in their wandering.
Oh speak not to me, thou phantom bird,
Of rocks unseen and of storms unheard.

Whether in sunshine or in storms,
These sports mysterious they pursue,
Still I behold their fairy forms,
Flitting amidst the briny dew.
Oh speak not to me, thou phantom bird,
Of rocks unseen and of storms unheard.

The live long day I've stood to gaze,
Marking these spectres of the sea,

Glancing in many a giddy maze,
O'er the green waters, merrily,
Speak not to me, thou bird of the billow,
Of a coral bed and wavy pillow.

Through the wide ocean's vast expanse,
Where e'er the billow bursts in foam,
These spectre birds lead on the dance,
And find in every wave a home.
False Peterel farewell, thy tale's untrue,
Danger is past—our port is in view.

HABITS AND MANNERS OF A FEMALE BORNEO ORANG-UTAN, AND A MALE CHIMPANZEE.

By J. E. Warwick.

The great interest and curiosity excited by the recent exhibition of the Chimpanzee and the Borneo Orang-Utan; and a suggestion which has been made to me, that the opportunity I possessed of being constantly with them should be made productive of some result, have induced me to mark and note down the manners and dispositions of these interesting specimens of the animal kingdom; and I now submit the following, in the hope that it may be acceptable to many of your readers, very few of whom, probably, have ever seen the animals whose singular habits I am here attempting to describe.

On the first sight of the two specimens, the difference was so remarkable as almost to excite a doubt whether they belonged to the same genus. The most striking points of distinction were the length of the facial angle in the female, or Borneo Orang (Símia Sátyrus;) the singular smallness of the ear, and its close resemblance to that of the human species; the pear-shaped head; the nose but in a slight degree elevated; the nostrils narrow and oblique; the extreme length of the arms, the use made of them in walking, the animal resting the hands on the ground, and swinging as if on crutches; the hair of a reddish brown, very short, and but slightly scattered over the body; the abdomen exceedingly protuberant; the feet long, with the largest toe peculiarly short, but exhibiting a perfect nail; these were the striking peculiarities on the first sight of the female; while the Chimpanzee (Símia Troglódytes) exhibited a marked contrast in the general character of its form, presenting a much nearer approach to that of the human race. Its conformation comprises all those points of resemblance which characterise the Orang-Utan, besides other instances of approximation which in that animal are not observable. The form of the head, the intellectual superiority that distinguishes the cast of the features; the proportionate length of arm to that of the body; the larger and perfect thumb; the roundness of the thigh; the perfect feet, and the consequent upright mode of walking; the complete formation of the last joint of the great toe; the quality of the sounds which it occasionally utters;—all these are points which at once strike the observer, denoting the superiority of the Chimpanzee over the Borneo Orang-Utan, as well as the widely different characters that distinguish them.

I must here confess myself unable to give you a scientific description of the animal: it is simply my intention to detail some of those peculiarities and habits, which few but myself have had an opportunity of observing.

On the occasion of their introduction to each other, it was curious to notice in what way they would act; not having seen any of their class for many months, and being so distinct in character, and natives of different quarters of the globe. On their being placed on the floor together in a private apartment, they stood at some distance from each other, resting on their knuckles, in evident contemplation of the new form they now saw for the first time. They then approached nearer, smelling each other very sensibly; the female protruded her prominent lower lip, touching the lip of the male, but without any smack or noise. This was done apparently without any expression of joy or mutual attachment, but merely as an act of recognition of two of the same tribe meeting in a foreign land; nor was I ever afterwards able to discover the least sign of tenderness or attachment to each other; but, on the contrary, a decided inclination to keep aloof, especially on the part of the female, whose timidity allowed the male to take from her hands any dainty that might have been given to her, with great reluctance on her part, but with evident fear of repelling the insult. On the experiment being tried of forcing them to sleep in the same cage, a battle took place, of which it was not afterwards deemed advisable to risk a repetition.

The companionable and sociable habits of the Chimpanzee far exceeded those of the female, as did his knowledge of persons whom he was in the habit of seeing. On first approaching him on a morning, or after being absent from him a short time, he would utter a loud cry of recognition; and, running towards you, would stand perfectly erect, spreading his arms to be taken up, when he would put them round your neck in the manner of the fondest embrace; nor was it an easy task, for those to whom he was attached, to leave the room, except by stealth. Food, on the other hand, was the only object that would cause any attachment, or even locomotion, in the female; of whom it might be said, that her appetite was the mainspring of all her actions, to which a protuberance and rotundity bore ample testimony. In feeding, the greediness of the female was evinced by her laying her body over the dish,

securing the choicest morsels both with hands and feet, and then feeding with her mouth in the dish, using her lips in the manner of the horse, and evincing the greatest fear lest any portion should be taken from her; while the Chimpanzee sat perfectly upright, taking small portions gracefully between his thumb and forefinger, in the most placid and gentle manner; nor was his rage ever excited except by refusing him a part of an orange, of which he might have caught a glimpse, or that he knew (which he evidently did by the smell) was contained in your pocket. Neither of these animals ever secured portions of food in the cheek or pouch; nor did they appear to smell their food before eating, as most of the monkeys do, except it was some uncommon substance which they had not been accustomed to eat. Both were in the habit of using a glass in drinking, but they were never known to throw it down; they invariably either gave it back, or set it down in the most careful manner. The Chimpanzee, in particular, was attracted by the brilliancy of colours, always getting up on the approach of any female whose dress was distinguished by the gaiety of its hues.

He likewise evinced great joy in being placed at a window, and would utter a scream of delight at the passing of horses and carriages; but nothing could exceed his rage when placed in a confined cage. He would then stand erect, crying, and shaking the bars with all his strength, until he obtained his release, when he would immediately fly to the arms of his liberator; and, such was his love of the society of those he knew, that the temptation of the choicest fruits would not entice him to remain in the room alone; for, if at liberty he would run towards the door, and try to get out first, or would embrace your knees, and cry in the most piteous manner to be taken with you. During the whole time they were together, I never knew them attempt the least gambol or amusement of any kind, either together or individually; nor did they take any notice of other animals, as cats, monkeys, squirrels, &c., that were placed with them; but would sit for hours with the utmost gravity, as if absorbed in the most intense thought. At other times the male would examine your person, pockets, and hands, with the most minute attention. Confinement seemed to be the most dreaded punishment; and, when threatened with that, he would cling to any one present for protection; and, at night, actual force was required to confine him to his bed, the female generally retiring of her own accord many hours before him. When called to by name, (Buck,) he generally answered with a short cry, putting out his hands to be taken up.

The instinct of providing and placing warm materials for her bed was the most marked in the female, who would be engaged for two hours at a time in dragging blankets from various parts of the room, smoothing and changing their position, and beating any raised part down with her knuckles; assuming at the same time a look of gravity and an appearance of wisdom. This capacity of providing and preparing a nightly lodging, seemed to be almost extinct in the Chimpanzee, possibly from his *sociality* and confidence in man, as he took no care in this particular; but if no place were provided for him, and, even when provided, if he did not like it, he would climb into the bed of his keeper. The timidity of both animals was remarkable, they being exceedingly alarmed even at inanimate objects; a toy-dog, or a cast of one of their own species, that was in the room, if removed the least towards them, was sufficient to drive them to the farthest extremity of the apartment, in *their* most nimble, though not very quick pace; and the fear exhibited by the female, at the sight of her deadly enemy, a boa constrictor, was most acutely evinced. It would appear as if they had not the power of distinguishing between the real and artificial, as a toy-snake shown to her produced the same results.

The hearing of both animals was remarkably acute, catching the most indistinct noise at a considerable distance; and their knowledge of sounds was accurately shown; as, on hearing the footsteps, on the stairs, of persons with whom they were acquainted, they ran towards the door before it was opened.

They were in the daily habit of riding in a coach, and on being seated, before the vehicle moved, they would secure themselves by getting a firm grasp of the hold-straps attached to the side of the coach.

It would seem that they had some knowledge of time; for, as the hour approached at which they were removed to their nightly residence, they would of their own accord get the blankets, and enfold themselves, in readiness to depart; and if their removal were protracted beyond the usual time, it required force to prevent them from going to the door. The Chimpanzee having caught a cold, which ultimately caused his death, he had a violent cough, that in sound was remarkably human; and as, when a fit of coughing came on, he was usually given some sweetmeat or cordial to stop it, he soon adopted the cough as a mode of obtaining those additional luxuries.

Nothing more evinced the impression which the appearance of the two animals made upon the persons who saw them, than the exclamation that usually followed the first sight of them. The universal cry on seeing the Chimpanzee, was, "What a nice little fellow!" or, "What a little darling!" while his less favoured partner, although of the softer sex, was generally saluted with, "What a disgusting beast!" &c. During his illness, his pitiable looks and evident sufferings, with his placidity and

gentle habits, endeared him to all who saw him: and when he could no longer swallow food, the quiet manner of putting the hand that offered it on one side, and uttering a peculiarly mournful cry, was painfully touching. When bled, he evinced not the least alarm or uneasiness, but put out his forefinger to touch the blood that was trickling from his arm; he even allowed a blister on the chest to remain, after having been scolded once or twice for attempting to remove it.

Without placing entire credence, then, in the many wonderful tales related of these animals, enough has surely been said to excite our curiosity and interest, and even to awaken our admiration.—*Mag. Nat. Hist.*

ON PRESERVING INSECTS SELECTED FOR CABINETS.

By C. Waterton.

I only know of two methods to guard prepared insects from the depredation of living ones. The first is, by poisoning the atmosphere; the second is, by poisoning the preserved specimens themselves, so effectually that they are no longer food for the depredator. But there are some objections to both these modes. A poisoned atmosphere will evaporate in time, if not attended to, or if neglected to be renewed; and there is great difficulty in poisoning some specimens on account of their delicacy and minuteness. If you keep spirits of turpentine in the boxes which contain your preserved specimens, I am of opinion that those specimens will be safe as long as the odour of turpentine remains in the box; for it is said to be the most pernicious of all scents to insects. But it requires attention to keep up an atmosphere of spirit of turpentine. If it be allowed to evaporate entirely, then there is a clear and undisputed path open to the inroads of the enemy: he will take advantage of your absence or neglect; and when you return to view your treasure you will find it in ruins. Spirits of turpentine, poured into a common glass inkstand, in which there is a piece of sponge, and placed in a corner of your box, will create a poisoned atmosphere, and kill every insect there. The poisoning of your specimens, by means of corrosive sublimate in alcohol is a most effectual method. As soon as the operation is properly performed, the depredating insect perceives that the prepared specimen is no longer food for it, and will for ever cease to attack it. But, then, every part must have received the poison; otherwise those parts where the poison has not reached will still be exposed to the enemy; and he will pass unhurt over the poisoned parts, till he arrive at that part of your specimen which is still wholesome food for him. Now, the difficulty lies in applying the solution to very minute specimens, without injuring their appearance; and all that can be said is, to recommend unwearied exertion, which is sure to be attended with great skill, and great skill will insure surprising success. The result has been astonishing success, and a perfect conviction that there is no absolute and lasting safety for prepared specimens in zoology from the depredations of insects, except by poisoning every part of them with a solution of corrosive sublimate in alcohol. I put a good large teaspoonful of well pounded corrosive sublimate into a wine-bottle full of alcohol. I let it stand over night, and the next morning draw it off into a clean bottle. When I apply it to black substances, and perceive that it leaves little white particles on them, I then make it weaker by adding alcohol. A black feather, dipped into the solution, and then dried, will be a very good test of the state of the solution. If it be too strong, it will leave a whiteness upon the feather.

A preparation of arsenic is frequently used; but it is very dangerous, and sometimes attended with lamentable consequences. I knew a naturalist, by name Howe, in Cayenne, in French Guiana, who had lost sixteen of his teeth. He kept them in a box, and showed them to me. On opening the lid:—"These fine teeth," said he, "once belonged to my jaws; they all dropped out by my making use of the *savon arsenetique* for preserving the skins of animals. I take this opportunity of remarking that it is my firm conviction, that the *arsenetical soap* can never be used with any success, if you wish to restore the true form and figure to a skin.

I fear that your correspondent may make use of tight boxes and aromatic atmospheres, and still, in the end, not be completely successful in preserving his specimens from the depredation of insects. The tight box and aromatic atmosphere will certainly do a great deal for him; but they are liable to fail, for this obvious reason, viz. that they do not render, for ever, absolutely baneful and abhorrent to the depredator, that which in itself is nutritious and grateful to him. In an evil hour, through neglect in keeping up a poisoned atmosphere, the specimens collected by your correspondent's industry, and prepared by his art, and which ought to live, as it were, for the admiration of future ages, may fall a prey to an intruding and almost invisible enemy: so that, unless he apply the solution of corrosive sublimate in alcohol, he is never perfectly safe from a surprise. I have tried a decoction of aloes, wormwood, and walnut leaves, thinking they would be of service, on account of their bitterness. The trial completely failed.

[*Ib.*

AN ATTEMPT TO NATURALIZE THE VIRGINIAN PARTRIDGE IN ENGLAND.

A FEW years ago I purchased two brace of these elegant little birds from Mr. Cross, of Exeter Change, London, and brought them home with me in the coach. I have a small garden, walled round and covered over with wire, into which I turned them, but each brace separated from the other by a wire partition. Towards the latter end of May I perceived one of the cock birds carrying straws, and twisting them about over his head; and I found they were making a nest within a bundle of pea-sticks, which were placed in the garden for them to run under and hide themselves.

This nest was the joint production of male and female; it was placed on the ground within the pea-sticks, and shaped much like a wren's, with a hole on one side, and covered over at top. After the hen had laid about twelve eggs she began to sit, and with as much assiduity as our common hen. When I thought it was her time to hatch I examined the nest, and found it deserted, and the eggshells, which had evidently contained young birds, lying about. Much pleased with this circumstance, I went cautiously about to find the dam with her little ones, and, after searching a considerable time, the first intimation I had of her presence was from her flying in my face with great agitation, like our common hen. I retired much gratified, and observed the young ones, nine in number, collect again under the wings of their mother. The assiduity of this excellent parent was truly exemplary, and her attention unremitting, and she reared them all with very little trouble. What is very singular, there were eight cocks and but one hen, all of whom were reared till they moulted, and got their adult plumage; when, from some cause which I could never ascertain, they began to droop one after another, and before Christmas all the young birds died. Though I examined the stomachs and gizzards of most of them, yet I never could find out the cause of their deaths; but I have little doubt of its being some deleterious substance picked up in the place where I separated them from the old ones, soon after they became full-fledged, as the old birds escaped this mortality, and the cock-bird is now living, (October, 1830.)

The other pair never bred, but it was easily accounted for, as the hen was unwell from the first time I turned them down, and she lingered on to October, and then died.

Previously to and during the time the hen was sitting the cock serenaded her with his harsh and singular notes, some of them very similar to the mewing of a cat. He had also a peculiarity of constantly running round in a circle, till the ground whereon he performed his evolutions was worn as bare as a road, and the turf trodden down much in the same way as it is by the ruff in the fens during the season of incubation.

Nothing could be more cordial and harmonious than this happy family. When the shades of evening approached, they crowded together in a circle on the ground, and prepared for the slumbers of the night by placing their tails all together with their pretty mottled chins facing to the front in a watchful round-robin.

When food was thrown in for them, which consisted chiefly of spirted barley and wheat, and occasionally bread, the male bird would peck at the grain, but not eat any himself until he had called his family around him, first to partake of the food; which he did with many soft blandishments, and with much strutting and spreading of the wings and tail.

I was much disappointed at the loss of this interesting family; and I waited with some impatience for the result of another season. The season at length arrived: they built their nest again as usual; the hen laid about sixteen eggs; when, to my great mortification, just as she had begun to sit, I found her dead one morning, and can no otherwise account for the circumstance than by supposing that something must have frightened her in the night, and caused her to fly up with violence against the wires, which proved fatal to her. Thus ended my hopes of domesticating this elegant little bird, as I have never been able to procure another female; though I have applied in London for that purpose. The guard of a coach informed me that he had the care of a basket of these birds by his coach; that they all, by some accident, got out and flew away; and that in the part of the country where they made their escape (which I have now forgotten) they had bred and increased exceedingly. I have also heard of their doing well in some parts of the south of this kingdom. I know that a quantity were turned down upon the large demesne of Edward John Littleton, Esq. M. P., at Teddesley, in Staffordshire, and that they did not breed at all, but straggled away, and some of them were shot ten or fifteen miles from his estate.

I should feel much obliged by any of your correspondents informing me where I could procure some living specimens of this bird, as I should much wish to breed some more, and turn them out, if I became successful, as they lay many eggs, and are much more easily reared than either pheasants or partridges.

J. C.

Staffordshire, October, 1830. [*Ib.*

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SPOTTED GROUS.

TETRAO CANADENSIS.

[PLATE VIII. Vol. 3.—half size.]

Tetrao Canadensis, CH. BONAPARTE'S *American Ornithology*, Vol. III. p. 47, *pl.* XXI.—LINN, *Syst.* I. p. 207. *sp.* 3.—GMEL. *Syst.* I. p. 749, *sp.* 3.—LATH. *Ind.* p. 637, *sp.* 6.—FORSTER, *in Phil. Trans.* LXII. p. 389.—TEMM. *Ind. Gall. in Hist. Pig. et Gall.* III. p. 702.—VIEILL. *Novio. Dict. Hist. Nat.*—SABINE, *Zool. app. Frank. Exp.* p. 683.—NOB. *Cat. birds, U. S. sp.* 207. ID. *Syn. Birds, U. S. sp.* 108.

Lagopus Bonasa Freti Hudsonis, BRISS. *Orn.* I. p. 201. *sp.* 6.—KLEIN. *Av.* p. 117, *sp.* 6.—*La Gelinotte du Canada*, BUFF. *Ois.* II. p. 279.—*Black and Spotted Heath Cock*, EDW. *Glean. p.* 71, *pl.* 118.—*Brown and Spotted Heath Cock*, ELLIS. *Hudson Bay*, I. *t.* p. 50.

Spotted Grous, PENN. *Arct. Zool. sp.* 182, LATH. *Syn.* IV. p. 735, *sp.* 6. *In Suppl.* p. 214.—*The small Speckled Pheasant*, LEWIS *and* CLARK *Exp.* II. p. 182. —Philadelphia Museum.

"THE Spotted Grous," says M. Bonaparte, "is well characterized by its much rounded tail of but sixteen broad and rounded feathers, and may be at once distinguished from all others by the large and conspicuous white spots, ornamenting the breast, flanks, and under tail-coverts.

"It has been inaccurately compared with the European *Tetrao bonasia*, from which it differs very materially, not even being of the same subgenus, and approaching nearer, if indeed it can be compared with any, to the *Tetrao urogallus*.

"This bird is common at Hudson's Bay throughout the year—there frequenting the plains and low grounds, though in other parts of America it is found on mountains, even of great elevation. It inhabits Canada in winter, and was seen by Vieillot in great numbers, during the month of October, in Nova Scotia. Lewis and Clark met with it on the elevated range of the Rocky Mountains, and brought back from their western expedition a male specimen, now deposited in the Philadelphia Museum, where it has been long exhibited under the name of Louisiana Grous. This, as truly observed by Say, first entitled it to rank among birds of the United States. But the Rocky Mountains are not the only region of the United States territory where the Spotted Grous is found. We have traced it with certainty as a winter visitant of the northern extremity of Maine, Michigan, and even the state of New-York; where, though very rare, it is found in the counties of Lewis and Jefferson. On the frontiers of Maine it is abundant, and has been seen by Professor Holmes of the Gardiner Lyceum, near Lake Umbagog, and others. In these countries the Spotted Grous is known by the various names of Wood Partridge, Swamp Partridge, Cedar Partridge, and Spruce Partridge. The American settlers of Canada distinguish it by the first. In Michigan and New-York it generally goes by the second. In Maine it bears the third; and in other parts of New-England, New-Brunswick, &c., more properly the last. We have been informed by Gen. Henry A. S. Dearborn, that they are sent from Nova Scotia and New-Brunswick to Boston in a frozen state; as in the north they are known to be so kept hanging throughout the winter, and when wanted for use, they need only be taken down and placed in cold water to thaw. General Dearborn, to whom we are much indebted for the information which his interest for science has induced him voluntarily to furnish, mentions, that he has heard from his father, during the progress of the expedition under Arnold through the wilderness to Quebec in 1775, these Grous were occasionally shot between the tide waters of the Kennebeck river, and the sources of the Chaudiere, now forming part of the state of Maine. Five specimens of the Spotted Grous have been sent to the Lyceum of Natural History of New-York from the Sault de ste Marie, by Mr. Schoolcraft, whose exertions in availing himself of the opportunities which his residence affords him for the advancement of every branch of Zoology, merits the highest praise. He informs us that this bird is common from Lake Huron to the sources of the Mississippi, being called in the Chipeway language Muskeodasee, i. e. Partridge of the Plains.

"The favourite haunts of the Spotted Grous are pine woods, and dark cedar swamps; in winter resorting to the deep forests of spruce to feed on the tops and leaves of these ever-greens, as well as on the seeds contained in their cones, and on juniper berries. Hence their flesh, though at all times good, is much better in summer, as in winter it has a strong flavour of spruce. At Hudson's Bay, where they are called indifferently Wood or Spruce Partridge, they are seen throughout the year. Like other Grous, they build on the ground, laying perhaps seven eggs; these are white, yellow, and black. They are easily approached, being unsuspicious, and by no means so shy as the common Ruffed Grous, and are killed or trapped in numbers without much artifice being necessary for this purpose. When much disturbed, like their kindred species, they are apt to resort to trees, where, by using the precaution of always shooting the lowest, the whole terrified flock may be brought down to the last bird.

"The Spotted Grous is smaller than the common Partridge or Pheasant; being but fifteen inches in length. The bill is black, seven-eighths of an inch long. The general colour of the plumage is made up of black and gray mingled in transverse wavy crescents, with a few of grayish rufous on the neck. The small feathers covering the nostrils are deep velvetly black. The feathers may all be called black as to the ground colour, and blackish plumbeous at the base; on the crown, upper sides of the head above the eye, and the anterior portion of the neck, they have each two gray bands, or small crescents, and tipped with a third; these parts, owing to the gray margin of the feathers being very broad, appear nearly all gray. These long feathers of the lower part of the neck above, and between the shoulders, are more broadly and deeply black, each with a reddish band, and gray only at the tip; the lowest have even two reddish bands, which pass gradually into grayish; a few of the lateral feathers of the neck are almost pure white; all the remaining feathers of the upper parts of the body have two grayish bands, besides a slight tip of the same colour; some of the lowest and largest having even three of these bands besides the tips. The very long upper tail-coverts are well distinguished, not only by their shape, but also by their colours, being black, brown, thickly sprinkled on the margin with grayish rusty, and a pretty well defined band of that colour towards the point, then a narrow one of deep black, and are broadly tipped with whitish gray, more or less pure in different specimens; their shafts, also, are brownish rusty. The sides of the head beneath the eyes, together with the throat, are deep black, with pure white spots, the white lying curiously upon the feathers, so as to form a band about the middle, continued along the shaft and spreading at the points; but the feathers being small on these parts, the white spots are not very conspicuous.

"The breast also is deep black; but each feather broadly tipped with pure white, constituting the large spots by which this species is so peculiarly distinguished. On the flanks, the feathers are at first from their base waved with black and grayish rusty crescents, but these become gradually less pure and defined, and by getting confused, make the lowest appear mottled with the two colours; all are marked along the shaft with white, dilating at the tip, forming on the largest a conspicuous spot. The vent is for a space pure white, the tips of its downy feathers being of that colour; the under tail-coverts are deep black, pure for half an inch at their tip, and with a white mark along the shaft beside. The wings are seven inches long, the fourth primary alone being somewhat longer than the rest. The upper coverts and scapularies are blackish; waved and mottled with grayish rusty; the longest scapularies have a small terminal spot of pure white along the shaft. The smaller coverts are nearly edged with grayish rusty, and in very perfect specimens they are even plain; the under wing-coverts are brownish dusky, edged with grayish, some of the largest, as well as the long axillary feathers, having white shafts, dilating into a terminal spot; the remaining inferior surface of the wing is bright silvery gray: the spurous wing and the quills are plain dusky brown, the secondaries being slightly tipped and edged externally with paler, and those nearest the body somewhat mottled with grayish rusty at the point on the inner vane; the primaries, with the exception of the first, are slightly marked with whitish gray on their outer edge, but are entirely destitute of white spots. The tail is six inches long, well rounded, and composed of only sixteen feathers. These are black, with a slight sprinkling of bright reddish on the outer web at base, under the coverts, which disappears almost entirely with age—all are bright dark rusty for half an inch at their tip, this colour itself being finely edged with black.

"The tarsus measures an inch and a half, its feathers, together with the femorals, are dusky gray, slightly waved with dusky; the toes are dusky; the lateral scales dingy whitish, and the nails blackish.

"The female is smaller than the male, being more than an inch shorter. The general plumage is much more varied, with less of black, but more of rusty. There is a tinge of rufous on the feathers of the nostrils. Those of the head, neck, and upper part of the back, are black, with two or three bright bands of orange rusty, and tipped with two gray; there is more of the gray tint on the neck, on the lower part of which above the orange bands are broader; all the remaining parts of the body above, including the tail-coverts, are more confusedly banded and mottled with duller rusty orange and gray, or a blackish ground, these colours themselves being also sprinkled with a little black. The sides of the head, the throat, and all the neck below, are dull rusty orange, each feather varied with black; on the lower portion of the breast the black bands are broad and very deep, alternating equally with the orange rusty, and even gradually encroaching upon the ground colour. The breast is deep black, each feather, as well as those of the under parts, including the under tail-coverts, are broadly tipped with pure white, forming over all the inferior surface very large and close spots, each feather having besides one or two rusty orange spots, much duller and paler, on the belly, and scarcely appearing when the plumage lies close: the feathers of the flanks are blackish, deeper at first and barred with very bright orange, then much mottled with dull grayish rusty, each having a triangular white spot near the tip. The wings and tail

are similar to those of the male; the variegatives of the scapulars and upper coverts being only of a much more rusty tinge, dull orange in the middle on the shaft, all the larger feathers having moreover a white streak along the shaft, ending in a pure white spot, wanting in the male.

"The outer edge of the primaries is more broadly whitish, and the tertials are dingy white at the point, being also crossed with dull orange; the tail feathers, especially the middle ones, are more thickly sprinkled with rusty orange, taking the appearance of bands on the middle feathers, then orange coloured, tip being moreover not so pure, and also sprinkled."

Those specimens from the Rocky Mountains somewhat differ from those of the north, being larger in size, having the tail black to the end, and the toes not so strongly pectinated, and the tail-coverts are pure white at tip.

A WOLF HUNT.

Many of the inhabitants of the Wyalusing Valley remember Isaac H. Metcalf, who moved from that neighbourhood to Tioga county, a few years ago. Isaac is a tall, active, hardy fellow, and as good a hunter as is to be found within an hundred miles of Brookfield township. It is not probable that any foreign foe will ever invade Brookfield; but if Isaac should get a sight of such a fellow's head within two hundred yards of him, I would not give six-pence for his chance of escaping a rifle bullet. But although two legged foes are not likely to invade Brookfield, four legged ones, in the shape of wolves and foxes, are, unfortunately for sheep and poultry, too frequently to be traced by their ravages. One of the former—who found, to his cost, that he had mistaken his man—took the liberty of invading Isaac's sheep-fold, one morning just after he had foddered his flock, and on Isaac's return a few minutes afterwards, he found him, without the ceremony of "by your leave, sir," regaling on some of his fattest mutton. Indignant at the affrontery of the transaction, Isaac ran into the house for his rifle; but the wolf, in the midst of his gluttony, kept an eye for his safety, and on the hunter's return, he could only fire a shot at the flying marauder, which grazing the animal's belly, passed through his forefoot, as it was raised in his gallop, and deranged, in some degree, the regularity of his race.

Isaac, who, though self-taught, appears to have acted on the principle of Napoleon, never to suffer a flying enemy to have any rest, ran back to the house, seized a loaf of bread, with a laudible precaution, which the celebrated Captain Dugald Dalgetty would have approved, and, with his dog, started in pursuit. The dog liked the sport, and, the wolf's speed being somewhat impaired by the accident which had happened to his foot, in an hour or two overtook him, and had a slight scuffle with him: but considering that "the better part of valour is discretion," he merely endeavoured to delay the enemy till the arrival of his master. The wolf, however, appeared to be well aware of the dog's intention, or, in the hunter's phrase, was "up to trap," and before Isaac could get within long shot of him, would take to his heels. In this way, with repeated skirmishes, the first day passed; and at night man and dog laid down on some brush made into a bed by the hunter. They found the loaf of bread a very useful article in the campaign. At day light they "took the track" again, and two other days and nights passed like the first, the dog frequently overtaking the wolf, occupying his attention and skirmishing with him till the near arrival of his master, of which the wolf contrived to take sufficient notice, and always to be off before the hunter could get within rifle shot. Each morning it was ascertained, that at bed time, the wolf had been too tired to hunt for food, and remained where he had laid down till roused by the dog in the morning. In the afternoon of the fourth day he was fairly worn out and exhausted, and the hunter coming up, the dog seized the wolf, and as they rolled over each other, the hunter clapped his rifle to the wolf's neck, discharged the load through it, and broke the bone to pieces.

Isaac had not asked himself where he was during the four days' chase. He had seen nobody, and he passed through no clearing or improvement, but as a true hunter is not to be lost by all the turnings and twistings of such a devious route as he had been led, going, at one time, right "a-head," as Col. Crockett says, or "bock again," as Sawney said, and as some of our politicians do, or wish they could do; but he "guessed" he was somewhere south-west from his house; and so, after he had taken the enemy's scalp, with as much of the skill of an *artiste* as any of the Black Feet or Dog-Ribbed Indians could have shown, he "laid his course," as he said, to the north-east, and found that when he was "in at the death," he was in Potter county, about twelve miles from his house; but supposes that he must have travelled, during the chase, nearly an hundred and fifty miles.

DOMESTIC PIGEONS, THEIR VARIETIES AND MANAGEMENT.

The Pigeon is monoganous, that is, the male attaches and confines himself to one female, and the attachment is

reciprocal; the fidelity of the dove to its mate being proverbial. Young pigeons are termed *squeakers*, and begin to breed at about the age of six months, when properly managed: their courtship, and the well known tone of voice in the cock, just then acquired and commencing, are indications of their approaching union. Nestlings, whilst fed by the cock and hen, are termed *squabs*, and are at that age sold and used for the table. The dove-house pigeon is said to breed monthly, being well supplied with food, more particularly when the ground is bound by frost, or covered with snow. At any rate, it may be depended on, that pigeons of almost any healthy and well-established variety, will breed eight or ten times in the year; whence it may be conceived how immense are the quantities which may be raised.

The first step towards *pigeon keeping*, is, undoubtedly, to provide a commodious place for their reception, of which I shall afterwards speak; the next, to provide the pigeons themselves. These will be had in pairs, but if not actually *matched*, pains must be afterwards taken, to that end, that no time be lost; indeed, they may be matched according to the fancy of the keepers, for the purpose of varying the colours, or with any other view. But it is necessary to give a caution on the subject of *old pigeons*, of which a bargain may offer, since the difficulty of retaining them is so great, indeed insuperable, without the strictest vigilance. Nothing short of cutting their wings, and confining them closely until they have young to attach them to the place, will be a security; and even afterwards, they have been known to take flight with the first use of their wings, and leave their nests. I have had several examples of this. Thence it is always preferable to purchase *squeakers*, or such as have not yet flown; these, being confined, in a short time, well fed, and accustomed gradually to the surrounding scenery, before they have acquired sufficient strength of wing wherewith to lose themselves, will become perfectly domesticated.

The *dove-cote*, or pigeon-loft, as to its situation or extent, will necessarily depend on convenience, one *general rule*, however, must be invariably observed,—that every pair of pigeons have two holes, or rooms, to nest in. Without this indispensable convenience there will be no security, but the prospect of constant confusion, breaking of eggs, and destruction of the young. Pigeons do well near dwellings, stables, bake-houses, brew-houses, or such offices; or their proper place is in the poultry-court. A dove-cote is a good object situate upon an island, in the centre of a piece of water: indeed, such is a proper situation for aquatic poultry, and rabbits also; and may be rendered extremely beautiful and picturesque by planting, and a little simple ornamental and useful building. Where pigeons are kept in a room, some persons prefer making their nests upon the floor, to escape the danger of the young falling out; but in all probability this is to guard against one risk, and incur a great number, particularly that of rats and other vermin.

Cleanliness is one of the first and most important considerations: the want of it in a dove-cote will soon render the place a nuisance not to be approached; and the birds, both young and old, will be so covered with vermin, and besmeared with their own excrement, that they can enjoy no health or comfort, and mortality is often so induced. Ours were cleaned daily, thoroughly once a week, a tub standing at hand for the reception of the dung, the floor covered with sifted gravel, often renewed. Pigeons are exceedingly fond of water, and, having a prescience of rain, will wait its coming until late in the evening, upon the house-top, spreading their wings to receive the refreshing shower. When they are confined in a room, they should be allowed a wide pan of water, to be often renewed, as a bath, which cools, refreshes, and assists them to keep their bodies clear of vermin. In the attendance upon pigeons, caution is necessary with respect to their fighting, to which they are more prone than might be expected, often to the destruction of eggs or young, or driving the weakest away.

The shelves should be placed sufficiently high, for security against vermin, a small ladder being a necessary appendage. The usual breadth of the shelves is about twenty inches, with the allowance of eighteen between shelf and shelf, which will be sufficient not to incommode the tallest pigeons. Partitions between the shelves may be fixed at the distance of about three feet, making a blind, by a board nailed against the front of each partition, whence there will be two nests in the compass of every three feet, so that the pigeons will sit in privacy, and not liable to be disturbed. Or a partition may be fixed between each nest; a good plan, which prevents the young from running to the hen, sitting over fresh eggs, and perhaps occasioning her to cool and addle them: for when the young are about a fortnight or three weeks old, a good hen will leave them to the care of the cock and lay again.

Some prefer *breeding-holes* entirely open in front, for the greater convenience in cleaning the nests; but it is from those that the squabs are likely to fall, thence a step of sufficient height is preferable. The tame pigeon seldom taking the trouble to make a nest, it is better to give her one of hay, which prevents her eggs from rolling. Or a straw basket, or unglazed earthen pan, may be placed in every nest, apportioned to the size of the pigeons you breed. A *pan* of three inches high, eight inches over the top, and sloping to the bottom like a basin, will be of suf-

ficient size for a *tumbler*, or a small pigeon, whilst one of double those dimensions will be required for a large *runt*. A brick should always be placed in contiguity to the pan, to enable the cock and hen to alight with greater safety upon the eggs.

Food and *water* should be given in such way, as to be as little as possible contaminated with the excrement, or any other impurity. Our pigeons having been constantly attended, we have never found the need of any other convenience than earthen pans; but there have been ingenious inventions for this purpose, of which the *meat-box* and *water-bottle* are specimens. The meat-box is formed in the shape of a hopper, covered at the top to keep clean the grain, which descends into a square shallow box. Some fence this with rails or holes on each side, to keep the grains from being scattered over; others leave it quite open, that the young pigeons may the more easily find their food.

The *water-bottle* is a large glass-bottle, with a long neck, holding from one to five gallons, its belly shaped like an egg, that the pigeons may not light and dung upon it. It is placed upon a stand, or three-footed stool, made hollow above, to receive the belly of the bottle, and let the mouth into a small pan beneath: the water will so gradually descend out of the mouth of the bottle as the pigeons drink, and be sweet and clean, and always stop when the surface reaches the mouth of the bottle.

To *match* or *pair* a cock and hen, it is necessary to shut them together, or near and within reach of each other; and the connexion is generally formed in a day or two. Various rules have been laid down, by which to distinguish the cock from the hen pigeon; but the masculine forwardness and action of the cock, is for the most part distinguishable.

Incubation.—The great increase of domestic pigeons does not proceed from the number of eggs laid by them, but from the frequency of their hatching. The hen lays but two eggs and immediately proceeds to incubation. Having laid her first egg, she rests one day, and, on the next, lays her second egg. They usually stand over the first egg, not sitting close until they have two, whence, both the young are hatched nearly at the same time: there are some exceptions, however, to this rule of nature, and the hen having sat close at first, one young bird may be hatched a day or two before the other. They often spoil their first eggs from inexperience.

The period of incubation is nineteen or twenty days from laying the first egg, and seventeen or eighteen from the last. The labour of sitting is equally divided between the cock and hen, excepting that the hen always sits by night. She is relieved in the morning by the cock, which sits during the greater part of the day. The business of feeding the young is also divided between the parents; and the cock has often brought up the young, on the accidental loss of his mate. Should not the eggs be hatched in due time, from weakness, some small assistance may be necessary to extricate the bird from the shell; or should they be addled, it is generally held necessary to provide the cock and hen with a borrowed pair of young, or at least one to feed off their soft meat, which else may stagnate in their crops and make them sick: but as young ones for this purpose may not always be at hand, the exercise of flying, fresh gravel, and those saline compositions generally given to pigeons, are the proper remedy. Addled, or rotten eggs, should be immediately removed.

Pigeons are extremely liable to be lost by accident, and that which is unaccountable, although they will find their home from such great distances, they nevertheless often lose themselves in their own neighbourhood. Should a cock or hen be lost during incubation, the eggs will be spoiled in twenty or thirty hours, and may then be taken from the nest; but if the accident happen after hatching, the single parent left will feed the young. Should both parents be lost, the young are very easily accustomed to be fed by hand with small peas or tares, much preferable to barley. We did not find any necessity of recourse to the old housewife's instrument, the hollow reed.

Soft meat is a sort of milky fluid or pap, secreted in the craw of pigeons, by the wise providence of nature, against the time when it will be wanted for the nourishment of their young. In all probability, from instinct, the pigeons eat a greater quantity at this time, and the grain goes through a certain process in their crops, which produces the soft meat or pap in question. This they have the power of throwing up at will; and, in feeding, they inject it from their own bills into those of the young ones, the bills of which are taken into their own. This kind of feeding continues six or seven days, when the old ones begin to mix some harder food with it, until at length they feed with whole grain. When the time approaches for the hen to lay, the cock is often seen driving her from place to place, not suffering her to rest any where but in her nest, apparently from an instinctive apprehension that she may drop her egg in an improper place.

Food.—Pigeons are entirely granivorous, and very delicate and cleanly in their diet; they will sometimes eat green vegetables, in particular warm salads, and are extremely fond of seeds. Tares, and the smallest kind of horse beans, commonly called pigeon beans, are both the best and cheapest food for pigeons, but the pulse should always be old, that is to say, of the previous year; as the new will scour pigeons as well as any other kind of live

stock. Seeds are occasionally given to pigeons, as a warming and stimulant diet, but according to my experience they greatly prefer rape and canary to hemp seed. It has been remarked, that beans, sodden in salt-water, scour pigeons equally with new beans, and, in a voyage, suffering them to drink sea-water will soon kill them; although so generally benefitted by salt, an excess of it is fatal, as it is also to vegetation, promoted as that is by a moderate quantity.

In most publications on the subject of pigeons, a dangerous mistake has been made in a term applied to beans. Small *tick* beans are recommended instead of small horse-beans. Now, the *tick* or *kidwell*, (in the western phrase,) are the larger of the two common field varieties, and beside being inferior in quality, are too large for pigeons, which have been sometimes choked even with the common-sized horse beans; on which account, the smallest possible should be procured, whence such are termed in the market accounts, 'pigeon-beans.' Pease, wheat, and buck-wheat, or brank, are eaten by pigeons; but should be given only in alternation, not as a constant diet. The same of seeds. They yet prefer wheat. The strong scent of cummin and flavour of coriander seeds are said to have an alluring effect upon the olfactory nerves and palate of these birds; as also the scent of *asafœtida*, and other powerfully odoriferous drugs; and that the use of fumigations of such, in the dove-cote, will not only attract the pigeons to their home, but allure strangers, which may be wandering in search of a habitation.

The last dietetic, or rather, perhaps, medicinal article necessary to be described, is the *salt-cat*, so called from some old fancy of baking a real cat with spices, for the use of pigeons, which, however, I never observed to eat animal food. In compliance with this custom, I caused to be placed in the middle of the pigeon-loft, a dish of the following composition: loam, sand, old mortar, fresh lime, bay-salt, cummin, coriander, caraway seed, and allspice, moistened into a consistence with urine. The pigeons were constantly pecking at this, and were in a constant state of good health; how much of which may be attributed to the use of the cat, I cannot determine; but, certainly, they are extremely fond of it, and if it have no other merit, it prevents them from pecking the mortar from the roof of the house, to which otherwise they are much inclined. The cat was mixed and heaped up in the dish, a peace of board being placed upon the summit, to prevent the birds from dunging upon it; when become too hard it was occasionally broken for them.

The regular *old formula* for this cat is as follows: gravel or drift-sand, unctuous loam, the rubbish of an old wall, or lime, a gallon of each—should lime be substituted for rubbish, a less quantity of the former will suffice—one pound of cummin-seed; one handful of bay-salt; mix with stale urine. Inclose this in jars, corked or stopped, holes being punched in the sides, to admit the beaks of the pigeons. These may be placed abroad.

Many fanciful and groundless tales may be found in old books, relative to the *medicinal* and *remedial* properties of almost every part of the pigeon; thus much, however, may be relied on, their flesh, when young and in good condition, is a nourishing and stimulant diet; that of the full aged pigeon more substantial, but harder of digestion, and, in a considerable degree, heating. The general rule of colour affecting quality in the flesh, holds good in tame pigeons. The black and dark feathered are proportionally dark or brown fleshed, of high flavour, inclining to the game bitter of the wild pigeon. The light colour in the feathers, denotes light and delicate flesh. Their *dung* is of an extremely heating and drying quality, whether as a manure, or for medicinal purposes. It was, in former days, a principal ingredient in nitre-beds, when that article was almost entirely manufactured at home.

Carriers, *horsemen*, and *dragoons*, are travellers or messengers, and I have occasionally seen *tumblers* turned off, at the distance of forty miles from home. The carrier, it is, said, has performed a journey of forty miles in an hour and a half, and of even ninety miles in three hours. A dragoon has flown seventy-six miles in two hours and a half: this ancient fancy of flying pigeons had declined, but has, it seems, revived within a few years. The admired qualities in the *tumbler* are excessive high flight, so as to be almost imperceptible to the keenest eye, in fine and clear weather; perseverance in their flight for many hours together, and tumbling over and over repeatedly during their ascent and descent.

In 1825, the Society of Amateurs at Antwerp sent ninety carriers to Paris, to fly for a prize. They were started from the French capital at seven in the morning, and by noon of the same day, thirteen of them had reached home. The first arrived at half-past eleven o'clock.

By what kind of natural qualification birds are able to explore their way across such immense distances of land and sea, seems to mock all human powers of inquiry: and granting the accuracy of ancient relations in respect to the regular and successful use of pigeons as messengers, it appears to be one of those ancient arts said to be buried in the grave of time, which has not hitherto encountered resurrection. The present price of a pair of carriers is about six guineas.

By my memoranda, in 1801, I observe, that sixty-five pairs of old pigeons, and one hundred and forty squeakers of all sizes, regularly fed, consumed in one week, five

pecks of the smallest beans, and ten quarts of seeds. The above old stock, without any young, consumed about half the quantity.

From the same. *Fantails* or *Shakers*, the head always in motion, are a beautiful stock, and good breeders, but so stupid and silly, as scarcely to be capable of taking care of themselves, or finding their home. *Runts*, although so much larger, breed as fast and equally forward as Tumblers. The duration of life in the pigeon is said to extend to about twenty years, and it is deemed full aged when the wings are full of the quill feathers.

The chief objects of the fancy have hitherto been those varieties styled *almond* (probably *ermine*) *tumblers*, *carriers*, and the birds with great crops, the most fashionable variety of which is the *pouting horseman*. The specific merits of these breeds are indicated by their names. The tumbler exercises that faculty in the air, but is chiefly valued for his peculiar form and variegated plumage. The carrier, as a messenger, cuts the air with almost inconceivable swiftness. This is the *Columba tabellaria*, the famous carrier or messenger, between *Aleppo*, and *Alexandria in Egypt*. The pouter distends his crop to a size attractive to curiosity, and by his grotesque attitudes and familiarity with man, engages his attention.

"The common dove house pigeon is the best to keep. They breed oftenest, and feed their young ones best. They begin to breed at about *nine months old*, and, if well kept, will give you eight or nine pair in a year. Any little place, a shelf in the cow shed; a board or two under the eaves of the house; or in short, in any place under cover, they will sit and hatch and breed up their young ones.

"It is not to be supposed that there could be much *profit* attached to them; but they are of this use; they are very pretty creatures, very interesting in their manners; they are objects of delight to *children* and to give them the early habit of fondness for animals, and of setting a value on them, which, as I have often had to observe, is a great thing."—*Moubray on Poultry.*

For the Cabinet of Natural History.

THE YANKEE PEDLAR, AND THE HUNTERS.

"Why is that you, all alive yet, Seth?" said a stout woodsman to a slender, modest looking youth. "Have you had any more painter scrapes since I saw you? I guess those tarnal fellows will make a meal of you some day, if you come to such close grips." "Let them, if they can," replied the lad, "I a'nt much fear'd on em." "Have you killed any panthers lately?" asked I. "Yes, some." "Some! how many does that mean in this part of the world." "I killed five or six—six it was." "Yes," said the woodsman, "and that last one had a nation mind to kill you." Why, I suppose, may be, it would have tried, if I had been minded to let it." "Tell me how it was, master Seth; for I should like to hear it."

"Why, sir, I wanted to have a hunt, and so I went over to one of the branches of the Sinnemahoning. It is a mighty wild place, and jist fit for bears and painters—up one hill and down another, all the way. I had shot a deer, and wounded it badly, and was following its track, when a she painter, with two young ones, came across the track, just before me. I suppose she smelt the blood, and wanted the deer for her young ones, and wished to drive me off: but that was not fair; for the deer, according to hunters' law, always belongs to him who first draws blood; and when I saw her coming right at me, I up with my rifle, and the blamed thing missed fire. The painter sprung right at me, and I made with my rifle a motion to strike her, which, I suppose, startled her; for she stopt all at once, and so near that I could have reached her with my gun—and such a grin as she gave, you never seed! I heard a fellow once sing a song how Davy Crockett grinned a coon off of a tree; but I'll be blamed if he could grin like that painter. I have thought since, that I wonder I was not skeered a little; but I wasn't skeered a bit; and as she kept grinning at me, I jist said to myself, why now, I'll be shot if this varmint's teeth are not longer than that old one's that I killed last; and then, I jist thought, if she'd only keep grinning for half a minit longer, I could put a prime in my gun; and so I took my powder horn, but I kept all the time staring her in the face, for it wouldn't do to take my eyes off of her, and so I primed all by guess; but I was quick about it, I tell you; and as soon as I had my rifle primed, I had a ball through her in a wink. You never seed sich a jump as she made! And then I cracked away at one of the young ones, and over it tumbled; but it was almost dark, and so I let them both lay, and went back to my camp. The next morning, bright and early, I went back again, and found the two that I had killed lying where I left them, and the other young one was lying by its mother. When it was lying down, it didn't seem much bigger than a fox, and it seem'd to be asleep; and so I thought if I could get round a tree jist by it, I could jump right on it, and catch it alive; and so I did. I believe it was asleep, for it never stirred till I fell right a top of it; and then if we hadn't a tight scuffle, I never had one! It wasn't big, but it scratched like all natur; and when I mastered him, it cost me a powerful site of trouble to tie his feet, so that he couldn't scratch; and at last, when

I had got him home, I didn't know what to do with him, and so I sold him to this fellow in the white hat for fifteen dollars, and he sold him to a yankee pedlar for fifty dollars—them yankee pedlars will buy any thing; but the pedlar paid for the painter in wooden clocks; and after the pedlar went away, none of the clocks would go. Tom—him in the white hat—said they all acted as if they were bewitched, and he got so mad at them, that he said he had a great mind to knock them all to pieces. But all this wouldn't have been so bad as it is, if the pedlar, when he was going to take the young painter away, hadn't made a bargain with Tom for a buck elk—I think he took the bark off of you there, Tommy. Tom don't like to tell that story, and so, I suppose, since you have made me tell mine, I must tell his'n.

"May be you know that there is still a heap of elks in that tract of country, away across from the Sinnemahoning to Toby creek. Well, the pedlar told Tom, when he bought the young painter, that he would give him a hundred and fifty dollars, and may be, two hundred dollars, if he would bring him a live buck elk, away to where he lived, at Rochester, in New-York state; and so Tom and another chap agreed to go halves in what they could make; and the first chunk of a snow storm that came, they set out on a hunt-like, and got ropes and dogs with them, and when they got on the track of some elks, they picked for the biggest track, and run a great buck elk so, that at last he took to fight the dogs till the men come up, and they got their ropes about his horns and tangled him so, that finally they got him down and secured him; and Tom thought it so fine an opportunity to make a fortin, that when they had got the elk tied to a tree, he offered the other chap fifty dollars for his chance, and he took him up at his offer at once. So Tom, as soon as he got ready, streaked it off with his elk to go to Rochester—a horse, with a long rope to the elk's horns before, to pull him along if he wanted to keep back; and two men, with each a rope to his horns, to hold him back if he wanted to pitch at the horse. So they went on for two days. Tom rode the horse, and the horse was almost skeared to death, and kept his head over one shoulder all the way, looking back at the elk, and the elk, he was nation sulkey; and they had a cruel time of it. Tom says, that the elk put up his hair all the wrong way, and was tarnal angry at all about him; and before they passed through Potter county, the elk, I suppose, thought he would not be made a fool of any longer, and so he jist laid down and died; and poor Tom here, had to go home again, and pay the fifty dollars to his partner in the hunt. He offered the fellow all the clocks which he had got in the bargain for my painter; but the other said he wouldn't have any thing to do with such nation silly things that wouldn't go at all; and if they did go, would make a noise like a house full of rattle snakes.

"And so Tom lays the blame of all this on my young painter; but it wasn't my painter at all that did it; and his old aunt Keezy told him so, and said that it was all a righteous judgment on him, for having any thing to do with one of them horn-flint, wooden-nutmeg yankee pedlars. And I am quite entirely of aunt Keezy's mind. Now, an't she right, Tom?" R.

SCIPIO AND THE BEAR.

The Black Bear *(Ursus americanus,)* however clumsy in appearance, is active, vigilant, and persevering; possesses great strength, courage, and address; and undergoes with little injury the greatest fatigues and hardships in avoiding the pursuit of the hunter. Like the deer, it changes its haunts with the seasons, and for the same reason, namely, the desire of obtaining suitable food, or of retiring to the more inaccessible parts, where it can pass the time in security, unobserved by man, the most dangerous of its enemies. During the spring months it searches for food in the low, rich, alluvial lands that border the rivers, or by the margins of such inland lakes as, on account of their small size, are called by us ponds. There it procures abundance of succulent roots, and of the tender juicy stems of plants, upon which it chiefly feeds at that season. During the summer heat it enters the gloomy swamps, passes much of its time in wallowing in the mud, like a hog, and contents itself with crayfish, roots, and nettles, now and then, when hard pressed by hunger, seizing on a young pig, or perhaps a sow, or even a calf. As soon as the different kinds of berries which grow on the mountains begin to ripen, the bears betake themselves to the high grounds, followed by their cubs. In such retired parts of the country where there are no hilly grounds, it pays visits to the maize fields, which it ravages for a while. After this, the various species of nuts, acorns, grapes and other forest fruits, that form what in the western country is called *mast*, attract its attention. The bear is then seen rambling singly through the woods to gather this harvest, not forgetting meanwhile to rob every *bee-tree* it meets with, bears being, as you well know, expert at this operation. You also know that they are good climbers, and may have been told, or at least may now be told, that the Black Bear now and then *houses* itself in the hollow trunks of the larger trees for weeks together, when it is said to suck its paws. You are probably not aware of a habit in which it in-

dulges, and which, being curious, must be interesting to you.

At one season, the Black Bear may be seen examining the lower part of the trunk of a tree for several minutes with much attention, at the same time looking around, and snuffing the air, to assure itself that no enemy is near. It then raises itself on its hind legs, approaches the trunk, embraces it with its fore legs, and scratches the bark with its teeth and claws for several minutes in continuance. Its jaws clash against each other, until a mass of foam runs down on both sides of the mouth. After this it continues its rambles.

In various portions of our country, many of our woodsmen and hunters who have seen the bear performing the singular operation just described, imagine that it does so for the purpose of leaving behind it an indication of its size and power. They measure the height at which the scratches are made, and in this manner, can in fact form an estimate of the magnitude of the individual. My own opinion, however, is different. It seems to me that the bear scratches the trees, not for the purpose of showing its size or its strength, but merely for that of sharpening its teeth and claws, to enable it better to encounter a rival of its own species during the amatory season. The Wild Boar of Europe clashes its tusks and scrapes the earth with its feet, and the Deer rubs its antlers against the lower part of the stems of young trees or bushes, for the same purpose.

Being one night sleeping in the house of a friend, I was awakened by a negro servant bearing a light, who gave me a note, which he said his master had just received. I ran my eye over the paper, and found it to be a communication from a neighbour, requesting my friend and myself to join him as soon as possible, and assist in killing some bears at that moment engaged in destroying his corn. I was not long in dressing you may be assured, and on entering the parlour, found my friend equipt, and only waiting for some bullets, which a negro was employed in casting. The overseer's horn was heard calling up the negroes from their different cabins. Some were already engaged in saddling our horses, whilst others were gathering all the cur-dogs of the plantation. All was bustle. Before half an hour had elapsed, four stout negro men, armed with axes and knives, and mounted on strong nags of their own, (for you must know, kind reader, that many of our slaves rear horses, cattle, pigs and poultry, which are exclusively their own property,) were following us at a round gallop through the woods, as we made directly for the neighbour's plantation, a little more than five miles off.

The night was none of the most favourable, a drizzling rain rendering the atmosphere thick and rather sultry; but as we were well acquainted with the course, we soon reached the house, where the owner was waiting our arrival. There were now three of us armed with guns, half a dozen servants, and a good pack of dogs of all kinds. We jogged on towards the detached field in which the bears were at work. The owner told us that for some days several of these animals had visited his corn, and that a negro who was sent every afternoon to see at what part of the enclosure they entered, had assured him there were at least five in the field that night. A plan of attack was formed: the bars at the usual gap of the fence were to be put down without noise; the men and dogs were to divide, and afterwards proceed so as to surround the bears, when, at the sounding of our horns, every one was to charge towards the centre of the field, and shout as loudly as possible, which it was judged would so intimidate the animals, as to induce them to seek refuge upon the dead trees, with which the field was still partially covered.

The plan succeeded. The horns sounded, the horses gallopped forward, the men shouted, the dogs barked and howled. The shrieks of the negroes were enough to frighten a legion of bears, and those in the field took to flight, so that by the time we reached the centre they were heard hurrying towards the tops of the trees. Fires were immediately lighted by the negroes. The drizzling rain had ceased, the sky cleared, and the glare of the crackling fires proved of great assistance to us. The bears had been so terrified, that we now saw several of them crouched at the junction of the larger boughs with the trunks. Two were immediately shot down. They were cubs of no great size, and being already half dead, we left them to the dogs, which quickly despatched them.

We were anxious to procure as much sport as possible, and having observed one of the bears, which, from its size, we conjectured to be the mother, ordered the negroes to cut down the tree on which it was perched, when it was intended the dogs should have a tug with it, while we should support them, and assist in preventing the bear from escaping by wounding it in one of the hind legs. The surrounding woods now echoed to the blows of the axemen. The tree was large and tough, having been girded more than two years, and the operation of felling it seemed extremely tedious. However, it began to vibrate at each stroke; a few inches alone now supported it; and in a short time it came crashing to the ground, in so awful a manner that Bruin must doubtless have felt the shock as severely as we should feel a shake of the globe produced by the sudden collision of a comet.

The dogs rushed to the charge, and harassed the Bear

on all sides. We had remounted, and now surrounded the poor animal. As its life depended upon its courage and strength, it exercised both in the most energetic manner. Now and then it seized a dog and killed him by a single stroke. At another time, a well administered blow of one of its fore-legs sent an assailant off yelping so piteously, that he might be looked upon as *hors de combat*. A cur had daringly ventured to seize the Bear by the snout and was seen hanging to it, covered with blood, whilst a dozen or more scrambled over its back. Now and then the infuriated animal was seen to cast a revengeful glance at some of the party, and we had already determined to despatch it, when, to our astonishment, it suddenly shook off all the dogs, and before we could fire, charged upon one of the negroes, who was mounted on a pied horse. The bear seized the steed with teeth and claws, and clung to its breast. The terrified horse snorted and plunged. The rider, an athletic young man, and a capital horseman, kept his seat, although only saddled on a sheep's skin tightly girthed, and requested his master not to fire at the bear. Notwithstanding his coolness and courage, our anxiety for his safety was raised to the highest pitch, especially when in a moment we saw rider and horse come to the ground together; but we were instantly relieved on witnessing the masterly manner in which Scipio despatched his adversary, by laying open his skull with a single well-directed blow of his axe, when a deep growl announced the death of the bear, and the valorous negro sprung to his feet unhurt.

Day dawned and we renewed our search. Two of the remaining bears were soon discovered, lodged in a tree about a hundred yards from the spot where the last one had been overpowered. On approaching them in a circle, we found that they manifested no desire to come down, and we resolved to try *smoking*. We surrounded the tree with a pile of brushwood and large branches. The flames ascended and caught hold of the dry bark. At length the tree assumed the appearance of a pillar of flame. The bears mounted to the top branches. When they had reached the uppermost they were seen to totter, and soon after, the branch cracking and snapping across, they came to the ground, bringing with them a mass of broken twigs. They were cubs and the dogs soon worried them to death.

The party returned to the house in triumph. Scipio's horse, being severely wounded, was let loose in the field, to repair his strength by eating the corn. A cart was afterwards sent for the game. But before we had left the field, the horses, dogs, and bears, together with the fires, had destroyed more corn within a few hours, than the poor bear and her cubs had, during the whole of their visits.—Audubon.

HIPPOPOTAMUS HUNT.

As all our attempts to obtain a hippopotamus had hitherto failed, and as we were not likely to meet with another opportunity, this being our last visit to Delagoa Bay, a party of officers volunteered for the chase, and were conveyed up the Dundas river in the Albatross. The evening set in before they reached that part of the river where the hippopotami were the most abundant. Three parties were however formed, who at midnight commenced their pursuit. The scene was novel and imposing; a body of men, armed at all points with muskets, harpoons, and lances, walking on the shallows of the river, with nothing but the moon to light them, all hallooing and driving before them their huge game, who, blowing, snorting, and bellowing, were floundering through the mud from the numerous holes which they had made at the bottom for their retreat, but from which the hunters' lances soon expelled them, until ultimately driven upon dry ground; where a running contest commenced, the beast sometimes being pursued and at others pursuing.

This lasted for some time; but still there were no signs of man's boasted pre-eminence: not an animal had the party secured, dead or alive. As low water was considered the best time for the pursuit of their game, when the flood set in the party amused themselves until the next ebb by scouring the woods for any birds or beasts that they could find. The deer, which were very numerous, consisted principally of three species, the fallow, spring, and hartebock; but they, as well as the buffaloes and monkeys, were so shy that none of the party could get near enough to fire with any hope of success.

During the pursuit, the party were obliged to be careful where they trod, as the forest abounded in pits dug by the natives to entrap the hippopotami and elephants. These were about twelve feet deep, formed like a wedge, and so neatly covered with reeds that even some of the hunters, notwithstanding their precautions, were caught, but fortunately not in any armed with spears at the bottom. At low water the following morning one party formed a line across one of the shallows, were the depth was not above two feet, while the boats went up the river and actually drove the animals down the stream, another party having lined the banks to prevent their taking to the woods and reeds. These, whenever the monstrous but timid animals attempted to pass them, set up a shout, which in most instances proved sufficient to turn them back into the water; when, having collected a vast number on one shallow bank of sand, the whole of the hunters commenced from all sides a regular cannonade upon the astonished brutes. Unwieldy as they appeared still much activity was

displayed in their efforts to escape the murderous and unceasing fire to which they were exposed. The one-pound gun occasionally furrowed the thick hide of some, while others were perpetually assailed by a shower of pewter musket-balls. One, a cub, was nearly caught uninjured in attempting to follow its mother, who, galled to desperation, was endeavouring to escape through the land-party; but, as soon as the affectionate brute perceived her off-spring falling into the hands of her enemies, forgetting her fears, she rushed furiously at the offenders, when they in their turn were obliged to retreat; but again they contrived to separate them, and had almost secured the prize, when the angry mother, regardless of their close and almost fatal fire, succeeded in redeeming it from their grasp and bearing it off, although herself in a state of great exhaustion. With the flood this sport ended.

On their return to the schooner along the banks of the river, passing near a spot where an hippopotamus had been seen sporting in the water, a loud rustling was heard amongst the reeds, as if the animal had retreated thither on the discharge of their pieces. Messrs. Arlett and Barrette, with two of the seamen, immediately followed with the view of driving him out. The former gentleman was a little in advance, and eager in the pursuit, when he was heard loudly to exclaim, "Here he is!" The shrill, angry scream of some large animal instantly followed, and in a few seconds Mr. Barrette rushed from the reeds with his face covered with blood and calling loudly for assistance, as Lieutenant Arlett was attacked and thrown down by an elephant. The party were immediately on the alert in search of the unfortunate officer, whom they expected to find a mangled corpse. As they approached, the elephant, alarmed at their numbers, retreated, leaving his victim on the ground in a state that may more easily be imagined than described. He was stretched motionless on his back, covered with blood and dirt, and his eyes starting from their sockets, in all the expressive horror of a violent death.

Every attention was immediately paid to him, but it was long feared that the vital spark had fled. Some water was procured, when, after his face had been washed and a little introduced into his mouth, he showed symptoms of returning life; but it was some time before he recovered his senses, and became sufficiently collected to give a connected account of the occurrence that had led to his pitiable state. It appeared that, from the thickness of the reeds, he was close to the animal before he was at all aware of his situation, but immediately on making the discovery, he uttered the exclamation heard by his companions of "Here he is!" This had hardly escaped, when he discovered that, instead of an hippopotamus, he was almost stumbling over an enormous elephant. The animal, which appeared highly irritated at the intrusion, waved its trunk in the air, and the moment he spoke, reared upon its hind legs, turned short round, and, with a shrill, passionate cry, rushed after him, bearing down the opposing reeds in his way, while Lieutenant Arlett vainly attempted to effect his escape. For a short time he had hopes of eluding his pursuer, as the animal perceived one of the seamen mounted on the top of a tree, about twenty feet high and three in circumference, menacing him by his voice and gestures, while preparing to fire. The elephant turned short round, and, shrieking with rage, made a kind of spring against the tree, as if to reach the object of his attack, when his ponderous weight bore the whole to the ground, but fortunately without hurting the man, who slipped among the reeds. The ferocious animal still followed him, foaming with rage, to the rising bank of the river; the man crying loudly, "An Elephant! an elephant!" until closely pressed by his pursuer, they both came upon the top of the slope, where the party who had heard his cries were prepared, and instantly fired a volley as the elephant appeared. This made him return with increased fury to Mr. Arlett, who, in his eagerness to escape, stumbled and fell, the huge beast running over him and severely bruising his ankle.

As soon as he had passed, Mr. Arlett arose, and, limping with pain, attempted once more to retreat, but the animal returned to the attack; his trunk was flourished in the air, and the next moment the unfortunate officer was struck senseless to the ground. On recovering himself his situation appeared hopeless, his huge antagonist standing over him, chaffing and screaming with rage, pounding the earth with his feet, and ploughing it with his tusks. When the party first saw them, Mr. Arlett was lying between the elephant's legs, and had it been the intention of the animal to destroy him, placing a foot upon his senseless body would in a moment have crushed him to atoms; but it is probable that his object was only to punish and alarm, not to kill —such conjecture being perfectly in accordance with the character of this noble but revengeful beast.

Mr. Arlett was with much care instantly conveyed on board the schooner, when, on examination, it was found that his body was severely bruised, yet no bones were broken, excepting the fibula of the left leg, which was supposed to be slightly fractured. It appeared that the elephant, on his last return to Mr. Arlett, had filled his trunk with mud, which, having turned him on his back, and forced open his mouth, he blew down his throat, injecting a large quantity into the stomach. It was this that produced the inflated appearance of Mr. Arlett's countenance, for he was almost in a state of suffocation, and for three

days after his adventure, he occasionally vomited quantities of blue sand.

When he encountered the elephant, he had a rifle in his hand, but he was too close to fire, knowing as he did, that in case of failure his destruction would be certain, for, when wounded, the desperation of this animal is fatal to all. Upon conveying him to the boat, this rifle was forgotten, and a party of four were despatched to recover it. They had just succeeded, and were about to return, when the elephant rushed in amongst them. The first and second man fired without effect, but the ball of the third fortunately turned him.

From the number of shots that were discharged, and apparently took effect on the hippopotami, the party had no doubt that some were killed. The natives had promised to inform them when the bodies floated on shore; but experience soon showed how little reliance could be placed on the word of these people, when a savoury repast was placed in the opposite scale. An hippopotamus head was discovered, the body having been conveyed away, and eaten. This awakened suspicion; our men traversed the bank of the river, and shortly came on a party of natives, who were in the act of cutting up the body of another. This was immediately taken possession of, and conveyed to the schooner, while upwards of three hundred natives on the opposite bank of the river, were showing, by their menacing gestures, how averse they were to lose their prize. In this animal three musket-balls had penetrated through the skin, which was one inch and a half in thickness, and lodged between the ribs; the fatal wound in the flank having been discharged from the rifle of Mr. Jamieson. This beast was of a small size, the head, without the tongue, weighing only two hundred and six pounds. The natives during the hunt were constant attendants, and had by far the largest share of the game.

[*Owen's Voyages on the Coast of Africa.*

CHURCH-GOING DOGS.

The shepherd's dog is one of the most intelligent and useful of the canine race; he is a constant attendant on his master, and never leaves him except in the performance of his duty. In some districts of Scotland this animal always accompanies him to church; some of them are even more regular attendants than their masters, for they never fail resorting thither, unless employed in tending their charge. It may easily be supposed that to a stranger visiting one of the churches in the pasture district, their appearance there will excite considerable interest. The first time I happened to be placed in that situation, I was not a little astonished to see with what propriety they conducted themselves throughout the greater part of the time we were in church; but towards the close one of the dogs began to show some anxiety to get away, when his master, for this unmannerly conduct, very unceremoniously gave him a kick, which caused him to howl, and to break the peace of the assembly, and, to add to his distress, some of his fellow dogs attacked him, as dogs are wont to do when they hear one of their species howl. The quarrel now became so alarming that the precentor was forced to leave his seat, and use his authority in restoring the peace; which was done by means of a few kicks. All the time of this disturbance the minister seemed very little discomfited, continuing his preaching without intermission, which showed that such were not rare occurrences.

In one parish great complaints were made against the disturbances occasioned during divine service by the quarrelling, or otherwise unmannerly conduct, of the dogs, when it was agreed that all who had dogs should confine them, and not allow them to come to church. This did very well for the first Sunday or so; but the dogs not at all relishing to be locked up on a day when they were wont to enjoy themselves, were never to be found on the Sunday mornings to be tied up; they, by some instinct which I cannot explain, knew the Sunday as well as their masters, and set off before them whither they had been in the habit of going on that day.

It was now evident to the members of the congregation that this plan would not do, and another scheme was laid before them, which was, to erect a house close to the church, in which they might be confined during divine service. This was adopted, and a kennel was accordingly erected, in which the dogs were imprisoned; but the animals being more accustomed to freedom than to confinement, took very ill with the restraint put upon their liberty, and set up a most dreadful howling, to the great annoyance of the people in the church. They however persevered in confining them for a considerable time, thinking the animals would get accustomed to their incarceration: but in this they were mistaken; for, instead of the howling diminishing, it got worse and worse. So it was agreed they should again be set at liberty and have freedom of access to the place of public worship; but their manners had been so corrupted that they were with difficulty restored even to their former discipline.

[*Mag. Nat. Hist.*

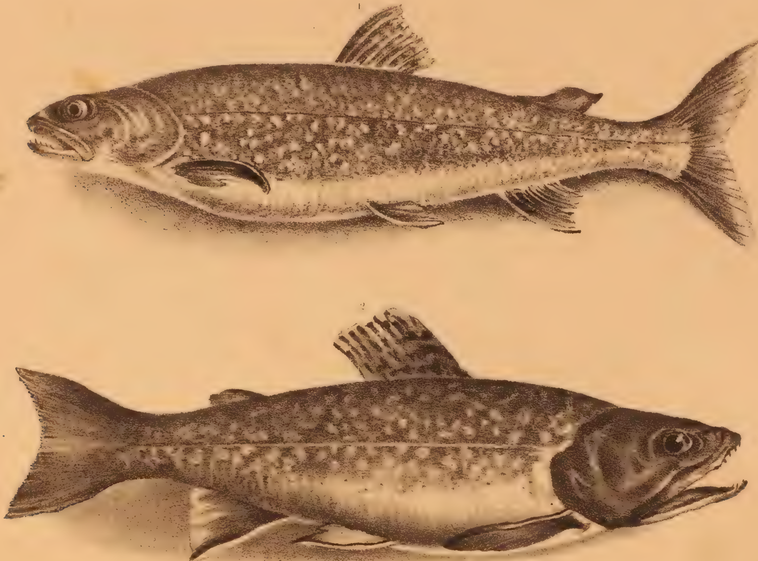
RUFFED GROUSE or PHEASANT

From Nature & on Stone by J. Doughty

QUAILS, OR PARTRIDGES.

Childs & Inman Lith

PL. 13



T. Doughty on Stone from a drawing by a Lady

1. Trout of Silver Lake, drawn from one 24½ inches long.

2. Male Brook Trout drawn from one 9 inches long in Septem.r

F... ... & Pinman's Press ...

WOODCOCK.

PL. 23.

From Nature and on Stone by T. Doughty.

GREAT TAILED SQUIRREL.

From Childs & Inmans, Press.

GREAT HORNED OWL.

RED FOX.

RACCOON.

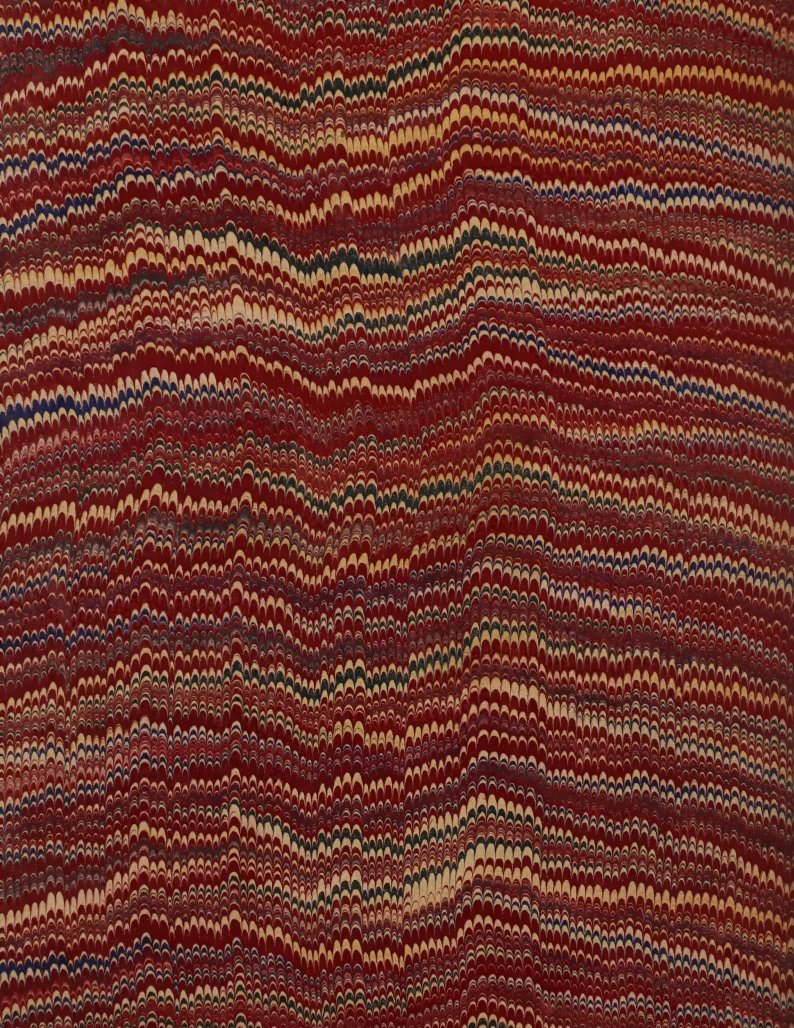
From Nature & on Stone by M.E. Wilson.

MARYLAND YELLOW-THROAT

AMERICAN REDSTART.

HUMMING BIRDS

Plate VI



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